

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Jonathan Crepeau Examiner #: 75637 Date: 10/28/03
 Art Unit: 1746 Phone Number 305 0051 Serial Number: 09/002124
 Mail Box and Bldg/Room Location: CP3 7E01 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.
 Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Polymeric Solid Electrolyte and Lithium Secondary Cell Using the same

Inventors (please provide full names): Kazuya Iwamura; Takafumi Oura; Shinji Nakawishi;
Atsushi Ueda; Hizuru Koshina

Earliest Priority Filing Date: 8/6/99

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

A polymer, which is capable of functioning as an electrolyte,
 which comprises a silylamide (Si-N-Si) bond. (see claim 1, attached.)

STAFF-USE ONLY

Searcher: <u>Ed</u>	Type of Search	Vendors and cost where applicable
Searcher Phone #:	NA Sequence (#) _____	STN <u>\$327.05</u>
Searcher Location:	AA Sequence (#) _____	Digit _____
Date Searcher Picked Up: _____	Structure (#) <u>(3) (subsets)</u>	Questel/Orbit _____
Date Completed: <u>10-28-03</u>	Bibliographic <u>(and)</u>	Dr. Link _____
Searcher Prep & Review Time: <u>5</u>	Litigation _____	Lexis/Nexis _____
Clerical Prep Time: _____	Fulltext _____	Sequence Systems _____
Online Time: <u>80</u>	Patent Family _____	WWW/Internet _____
	Other _____	Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 15:41:04 ON 28 OCT 2003
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=> display history full l1-

FILE 'REGISTRY' ENTERED AT 14:37:52 ON 28 OCT 2003
E LITHIUM BIS(TRIMETHYLSILYL)AMIDE/CN
L1 1 SEA "LITHIUM BIS(TRIMETHYLSILYL)AMIDE"/CN
L2 STR

FILE 'REGISTRY' ENTERED AT 14:40:33 ON 28 OCT 2003
L3 50 SEA SSS SAM L2
L4 56437 SEA SSS FUL L2
SAV TEM L4 CRE124/A

FILE 'LREGISTRY' ENTERED AT 14:43:22 ON 28 OCT 2003
L5 STR L2

FILE 'REGISTRY' ENTERED AT 14:44:29 ON 28 OCT 2003
L6 50 SEA SUB=L4 SSS SAM L5
L7 13328 SEA SUB=L4 SSS FUL L5
SAV TEM L7 CRE124A/A
L8 STR
L9 50 SEA SUB=L4 SSS SAM L8
L10 13077 SEA SUB=L4 SSS FUL L8
SAV TEM L10 CRE124B/A
L11 2031 SEA L4 AND LI/ELS

FILE 'HCA' ENTERED AT 14:52:24 ON 28 OCT 2003
L12 2123 SEA L11
L13 5938 SEA L10
L14 11599 SEA L7
L15 419198 SEA ELECTROLY?
L16 188010 SEA BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY?
OR GALVANI? OR WET OR DRY OR PRIMARY OR SECONDARY) (2A) (CE
LL OR CELLS) OR WETCELL? OR DRYCELL?
L17 25 SEA L12 AND (L15 OR L16)
L18 25 SEA L13 AND (L15 OR L16)
L19 84 SEA L14 AND (L15 OR L16)
L20 73 SEA L14 AND L15
L21 51 SEA L14 AND L16

FILE 'LCA' ENTERED AT 14:55:41 ON 28 OCT 2003
L22 4926 SEA (POLYMER## OR HOMOPOLYMER## OR COPOLYMER## OR
TERPOLYMER## OR RESIN? OR GUM?)/BI,AB
L23 4358 SEA (POLYMERIZ? OR POLYMERIS? OR POLYM# OR CURE# OR
CURING# OR DIGEST? OR CROSSLINK? OR CROSS(W)LINK? OR

VULCANIZ? OR VITRIF? OR GEL?)/BI,AB

FILE 'HCA' ENTERED AT 14:59:44 ON 28 OCT 2003

L24 18863 SEA (L22 OR L23) (2A)ELECTROLY?

L25 18863 SEA (L22 OR L23) (2A)ELECTROLY?

L26 18 SEA L21 AND L25

L27 5 SEA L13 AND L24

L28 25 SEA L14 AND L24

L29 850 SEA L1

L30 10 SEA L29 AND (L15 OR L16)

D L30 1-10 AU

SEL

L30 3 RN

FILE 'REGISTRY' ENTERED AT 15:09:21 ON 28 OCT 2003

L31 6 SEA (132843-44-8/BI OR 14283-07-9/BI OR 4039-32-1/BI OR

E POLYACRYLIC/PCT

L32 283166 SEA POLYACRYLIC/PCT

L33 1 SEA L32 AND L31

FILE 'HCA' ENTERED AT 15:13:01 ON 28 OCT 2003

L34 371475 SEA L32

L35 36 SEA L12 AND L34

L36 3 SEA L35 AND (L15 OR L16)

L37 14 SEA L27 OR L30 OR L36

L38 12 SEA L26 NOT L37

L39 34 SEA (L17 OR L18 OR L28) NOT (L37 OR L38)

FILE 'REGISTRY' ENTERED AT 15:41:04 ON 28 OCT 2003

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L2 STR

Si*N

1 2

NODE ATTRIBUTES:

NSPEC IS RC AT 1

NSPEC IS RC AT 2

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L4 56437 SEA FILE=REGISTRY SSS FUL L2

L5 STR

Si*N*Si
1 2 3

NODE ATTRIBUTES:

NSPEC IS RC AT 1
NSPEC IS RC AT 2
NSPEC IS RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L7 13328 SEA FILE=REGISTRY SUB=L4 SSS FUL L5

100.0% PROCESSED 30186 ITERATIONS
SEARCH TIME: 00.00.01

13328 ANSWERS

=> d l10 que stat
L2 STR

Si*N
1 2

NODE ATTRIBUTES:

NSPEC IS RC AT 1
NSPEC IS RC AT 2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L4 56437 SEA FILE=REGISTRY SSS FUL L2
L8 STR

C=C
1 2

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L10 13077 SEA FILE=REGISTRY SUB=L4 SSS FUL L8

100.0% PROCESSED 55583 ITERATIONS

13077 ANSWERS

SEARCH TIME: 00.00.02

=> file hca

FILE 'HCA' ENTERED AT 15:41:37 ON 28 OCT 2003

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Bud date

L37 ANSWER 1 OF 14 HCA COPYRIGHT 2003 ACS on STN

137:340001 Process for producing a modified **electrolyte** for electrochemical devices. Tanaka, Hiromitsu; Usuki, Arimitsu; Kawasumi, Masaya; Morimoto, Yu; Hasegawa, Naoki; Nakano, Mitsuru; Kamiya, Atsushi (Kabushiki Kaisha Toyota Chuo, Japan). U.S. Pat. Appl. Publ. US 2002160272 A1 20021031, 29 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-79873 20020222. PRIORITY: JP 2001-47634 20010223.

AB A first process for producing a modified **electrolyte** consistent with the present invention comprises an amine treatment step of contacting a solid polymer **electrolyte** or a precursor thereof with an amine compd. Further, a first modified **electrolyte** consistent with the present invention consists essentially of what is obtained in such a process. A second process for producing the modified **electrolyte** consistent with the present invention includes a step of introducing, to a solid polymer compd. having a functional group A, a first modifying agent comprising at least one functional group B capable of reacting with the functional group A thereby forming a first intermediate acid group; and the step also includes reacting the functional group A and the functional group B. Further, a second modified **electrolyte** consistent with the present invention comprises a solid polymer compd. having side chains, at least one terminal acid group present at terminals of the side chains, and at least one intermediate acid group and/or reformed acid group present within the side chains identical with the side chains contg. the terminal acid group.

IT 4039-32-1, Lithium bis(trimethylsilyl)amide
(polymer **electrolyte** treated with; process for
producing modified **electrolyte** for electrochem.
devices)

RN 4039-32-1 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Li

IC ICM H01M008-10
ICS H01M010-40
NCL 429314000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72, 76
ST fuel cell modified electrolyte prepn;
electrolyzer modified electrolyte prepn; sensor
modified electrolyte prepn
IT Creep
(elongation; process for producing modified electrolyte
for electrochem. devices)
IT Polyoxyalkylenes, uses
(fluorine- and sulfo-contg., ionomers; process for producing
modified electrolyte for electrochem. devices)
IT Polyimides, uses
(membranes; process for producing modified electrolyte
for electrochem. devices)
IT Fluoropolymers, uses
(perfluoro electrolyte membrane reinforced with;
process for producing modified electrolyte for
electrochem. devices)
IT Amines, processes
(polymer electrolyte treated with; process for
producing modified electrolyte for electrochem.
devices)
IT Fluoropolymers, uses
(polyoxyalkylene-, sulfo-contg., ionomers; process for producing
modified electrolyte for electrochem. devices)
IT Ionomers
(polyoxyalkylenes, fluorine- and sulfo-contg.; process for
producing modified electrolyte for electrochem.
devices)
IT Amidation
Electric conductivity
Electrolytes
Electrolytic cells
Fuel cell electrolytes
Heat treatment
Polymer electrolytes
Sensors
Solid state fuel cells

- (process for producing modified **electrolyte** for electrochem. devices)
- IT Fluoropolymers, uses
(process for producing modified **electrolyte** for electrochem. devices)
- IT Metal alkoxides
(sodium, polymer **electrolyte** treated with; process for producing modified **electrolyte** for electrochem. devices)
- IT 474100-64-6
(perfluoro **electrolyte** membrane reinforced with; process for producing modified **electrolyte** for electrochem. devices)
- IT 9002-84-0, Ptfе
(perfluoro **electrolyte** membrane reinforced with; process for producing modified **electrolyte** for electrochem. devices)
- IT 146829-76-7
(polymer **electrolyte** treated with; process for producing modified **electrolyte** for electrochem. devices)
- IT 75-04-7D, Ethylamine, alkali metal compd. 75-50-3, Trimethylamine, processes 107-10-8, Propylamine, processes 109-72-8, Butyl lithium, processes 109-73-9, Butylamine, processes 110-58-7, Pentylamine 110-86-1, Pyridine, processes 111-26-2, 1-Hexylamine 111-68-2, Heptylamine 112-20-9, Nonylamine 121-44-8, Triethylamine, processes 144-55-8, Sodium bicarbonate, processes 335-01-3, Perfluoromethylamine 423-32-5 497-19-8, Sodium carbonate, processes 584-08-7, Potassium carbonate 591-51-5, Phenyl lithium 812-47-5, Perfluorobutylamine 999-97-3D, Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, alkali metal compd. 1305-62-0, Calcium hydroxide, processes 1310-58-3, Potassium hydroxide, processes 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, processes 2016-57-1, Decylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]non-5=ene 4039-32-1, Lithium bis(trimethylsilyl)amide 4984-82-1, Sodium cyclopentadienide 6674-22-2, Dbu 7646-69-7, Sodium hydride 7664-41-7, Ammonia, processes 7693-26-7, Potassium hydride 7782-92-5, Sodium amide 7789-78-8, Calcium hydride 16940-66-2, Sodium borohydride 21645-51-2, Aluminum hydroxide, processes 82727-16-0 134380-80-6 262437-80-9, Aluminum lithium hydride 474100-48-6
(polymer **electrolyte** treated with; process for producing modified **electrolyte** for electrochem. devices)
- IT 197895-58-2D, Ethylene-styrene-tetrafluoroethylene graft copolymer, amidized 418770-63-5, Nafion 112f 474105-84-5, Nafion 111F
(process for producing modified **electrolyte** for electrochem. devices)
- IT 177601-69-3DP, amidized 177601-70-6DP, amidized 196309-83-8DP, amidized 302924-87-4DP, amidized
(process for producing modified **electrolyte** for electrochem. devices)

- IT 31694-16-3, Peek
(process for producing modified **electrolyte** for electrochem. devices)
- IT 474100-51-1P 474100-53-3P 474100-56-6P 474100-59-9P
(process for producing modified **electrolyte** for electrochem. devices)
- IT 76-13-1, R113 109-99-9, Thf, uses
(solvent; process for producing modified **electrolyte** for electrochem. devices)
- L37 ANSWER (2) OF 14 HCA COPYRIGHT 2003 ACS on STN
135:379519 Modified solid polymer **electrolytes** with improved heat resistance and durability and method for their modification. Tanaka, Hiromitsu; Usuki, Arimitsu; Kawakado, Masaya; Morimoto, Tomo (Toyota Central Research and Development Laboratories, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2001319521 A2 20011116, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-135545 20000509.
- AB The method contains contacting perfluoropolymer **electrolytes** or their precursors with amines. The **electrolytes** may be heated or treated with bases after the amine treatment. The process offers polymer **electrolytes** showing high heat resistance and good durability without sacrificing the elec. cond.
- IT 4039-32-1, Lithium bis(trimethylsilyl)amide
(amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- RN 4039-32-1 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)



- IC ICM H01B001-06
ICS C08J003-24; G01N027-406; H01M008-02; C08L027-22
- CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 52
- ST solid polymer **electrolyte** modification amine treatment; base treatment fluoropolymer membrane heat resistance; heating perfluoropolymer lithium methylsilylamide fuel cell
- IT Fuel cell **electrolytes**
Polymer **electrolytes**
(amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT Fluoropolymers, processes
(amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT Amines, reactions

- (amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT Polyoxyalkylenes, processes
(fluorine- and sulfo-contg., ionomers; amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT Fluoropolymers, processes
(polyoxyalkylene-, sulfo-contg., ionomers; amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT Ionomers
(polyoxyalkylenes, fluorine- and sulfo-contg.; amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT 374064-22-9, Nafion F 112
(amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)
- IT 121-44-8, Triethylamine, reactions 4039-32-1, Lithium bis(trimethylsilyl)amide 7664-41-7, Ammonia, reactions 7782-92-5, Sodium amide
(amine treatment of solid perfluoropolymer **electrolytes** with improved heat resistance and durability)

L37 ANSWER 3 OF 14 HCA COPYRIGHT 2003 ACS on STN

135:137856 Olefin block copolymers with linking groups, production processes of the same and use thereof. Ota, Seiji; Moriya, Satoru; Mori, Ryoji; Koda, Taku; Tan, Junji; Kojoh, Shinichi; Kaneko, Hideyuki; Hama, Shunichi; Nobori, Tadahito; Matsugi, Tomoaki; Kashiwa, Norio (Mitsui Chemicals, Inc., Japan). PCT Int. Appl. WO 2001053369 A1 20010726, 563 pp. DESIGNATED STATES: W: CN, KR, SG, US; RW: DE, FR, GB. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP298 20010118. PRIORITY: JP 2000-17848 20000121; JP 2000-17849 20000121; JP 2000-17850 20000121; JP 2000-18053 20000125; JP 2000-23333 20000127; JP 2000-24736 20000128; JP 2000-24737 20000128; JP 2000-28924 20000201; JP 2000-28925 20000201; JP 2000-28926 20000201; JP 2000-90716 20000327; JP 2000-111900 20000407; JP 2000-132859 20000427; JP 2000-147500 20000515; JP 2000-166470 20000531; JP 2000-288181 20000922; JP 2001-18054 20010125.

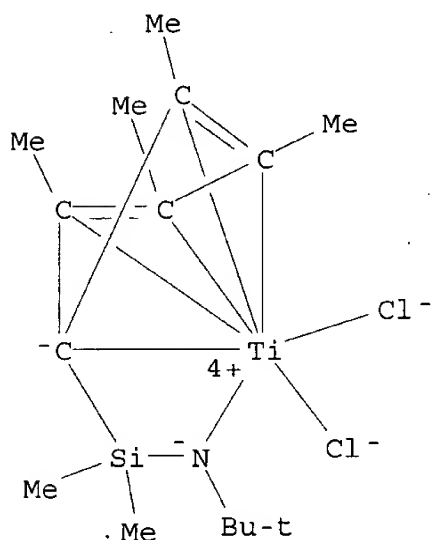
AB The olefin block copolymers have excellent in affinity with metal, polar resins or the like, impact resistance, mar resistance, thermal resistance, rigidity, oil resistance, transparency, antifogging properties, elec. insulation properties, breakdown voltage, application properties, low-temp. flexibility, moldability, environmental degrdn. properties, fluidity and/or dispersion properties. The block copolymers are of PO1-g1-B1 type (wherein PO1 is a segment composed of repeating units derived from C2-20 olefin; g1 is an ester, ether, amide, imide, urethane, urea, silyl ether, or carbonyl linkage; and B1 is an unsatd. hydrocarbon or heteroatom-contg. segment), and are useful for hot-melt adhesives, moldings, modifiers for plastics and rubbers, etc. Thus, a copolymer with O linking group was prep'd., e.g., by metallocene

polymn. of ethylene with norbornene, followed by converting the resulting single-end unsatd. group-terminated copolymer to a B-terminated copolymer using 9-BBN (9-borabicyclononane), and block copolymn. in THF with styrene in the presence of O.

IT 135072-61-6, (tert-Butylamido)dimethyl(tetramethyl-.eta.5-cyclopentadienyl)silanetitanium dichloride
(polymn. catalyst; polymer end conversion in manuf. of olefin diblock copolymers for use in plastics and rubbers)

RN 135072-61-6 HCA

CN Titanium, dichloro[N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-.eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N]- (9CI) (CA INDEX NAME)



IC C08F293-00; C08G081-00; C08L053-00; C08L101-00

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 39

IT Boronizing

Bottles

Coating materials

Containers

Inks

Oxidation

Pipes and Tubes

Plastic films

Polymer electrolytes

Sealing compositions

Transparent materials

(polymer end conversion in manuf. of olefin diblock copolymers for use in plastics and rubbers)

IT 135072-61-6, (tert-Butylamido)dimethyl(tetramethyl-.eta.5-cyclopentadienyl)silanetitanium dichloride
(polymn. catalyst; polymer end conversion in manuf. of olefin

diblock copolymers for use in plastics and rubbers)

L37 ANSWER 4 OF 14 HCA COPYRIGHT 2003 ACS on STN

134:165664 Solid **polymer electrolytes** and secondary lithium **batteries** using the **electrolytes**.

Iwamoto, Kazuya; Oura, Takafumi; Nakanishi, Shinji; Ueda, Atsushi; Koshina, Hizuru (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2001011706 A1 20010215, 18 pp. DESIGNATED STATES: W: CN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP4419 20000704. PRIORITY: JP 1999-223391 19990806.

AB The Li⁺ conducting **polymer electrolytes** have silylamide bonding (Si-N-Si) in their skeleton. Preferably, the **electrolyte** is a **polym.** product of a mixt. contg. an org. compd. having C:C double bond and a Li silylamide compd., e.g., Li bis(trimethylsilyl)amide.

IT 325723-03-3

(lithium conducting **polymer electrolytes** contg. silylamide bonding in skeleton for secondary lithium **batteries**)

RN 325723-03-3 HCA

CN 2-Propenoic acid, ethyl ester, polymer with 1,1,1-trimethyl-N-(trimethylsilyl)silamine lithium salt (9CI) (CA INDEX NAME)

CM 1

CRN 4039-32-1

CMF C6 H19 N Si2 . Li

Me₃Si-NH-SiMe₃

● Li

CM 2

CRN 140-88-5

CMF C5 H8 O2

$$\begin{array}{c} \text{O} \\ || \\ \text{EtO}-\text{C}-\text{CH}=\text{CH}_2 \end{array}$$

IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery** silylamide **polymer electrolyte**

INSTANT
APP

IT **Battery electrolytes**
(lithium conducting **polymer electrolytes**
contg. silylamide bonding in skeleton for secondary lithium
batteries)

IT 325723-03-3
(lithium conducting **polymer electrolytes**
contg. silylamide bonding in skeleton for secondary lithium
batteries)

L37 ANSWER 5 OF 14 HCA COPYRIGHT 2003 ACS on STN

134:165663 Secondary lithium **batteries**. Iwamoto, Kazuya;
Oura, Takafumi; Nakanishi, Shinji; Ueda, Atsushi; Koshina, Hizuru
(Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl.
WO 2001011705 A1 20010215, 21 pp. DESIGNATED STATES: W: CN, KR,
US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO
2000-JP4420 20000704. PRIORITY: JP 1999-223390 19990806.

AB The **batteries** have Li intercalating cathodes and anodes,
water insol. ion conductive solid polymer **electrolyte**
membranes coated on the surfaces of the electrodes, and an aq.
electrolyte soln. between the coated membranes. The polymer
electrolyte has a Li salt dissolved in a polyester,
polyamine, polysulfide, polyether copolymer, crosslinked polyether,
or polymer having polyether side chain.

IT 4039-32-1, Lithium bis(trimethylsilyl)amide
9003-32-1, Poly(ethyl acrylate)
(secondary lithium **batteries** contg. polymer
electrolyte coated electrodes and aq. **electrolyte**
between coating membranes)

RN 4039-32-1 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Li

RN 9003-32-1 HCA

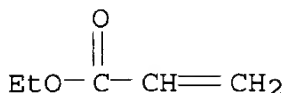
CN 2-Propenoic acid, ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5

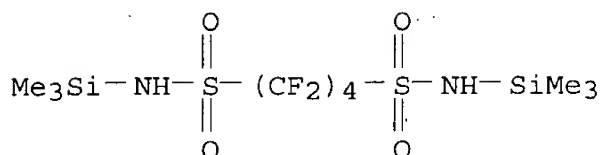
CMF C5 H8 O2

SAME ASSIGNMENT
BAD DATE



- IC ICM H01M010-36
ICS H01M004-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST secondary lithium **battery** electrode polymer
electrolyte coating; aq **electrolyte** secondary
lithium **battery**
- IT Secondary **batteries**
(lithium; secondary lithium **batteries** contg. polymer
electrolyte coated electrodes and aq. **electrolyte**
between coating membranes)
- IT Polyesters, uses
(secondary lithium **batteries** contg. polymer
electrolyte coated electrodes and aq. **electrolyte**
between coating membranes)
- IT 4039-32-1, Lithium bis(trimethylsilyl)amide 7782-42-5,
Graphite, uses 9003-32-1, Poly(ethyl acrylate)
14283-07-9, Lithium fluoroborate 52627-24-4, Cobalt lithium oxide
132843-44-8
(secondary lithium **batteries** contg. polymer
electrolyte coated electrodes and aq. **electrolyte**
between coating membranes)
- L37 ANSWER(6) OF 14 HCA COPYRIGHT 2003 ACS on STN BAD DATE
133:95984 High heat-resistant **polymer electrolyte** of
cross-linked fluoropolymer. Kawakado, Masaya;
Morimoto, Tomo (Toyota Central Research and Development
Laboratories, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000188013 A2
20000704, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1998-363934 19981222.
- AB The invention relates to a high heat-resistant **polymer**
electrolyte made from a perfluoro polymer and crosslinking
agent with acidic groups. The **polymer electrolyte**
shows the excellent high heat- and acid-resistance and the high
cond.
- IT 280558-75-0DP, hydrolyzed
(**polymer electrolyte**)
- RN 280558-75-0 HCA
- CN Ethanesulfonyl fluoride, 2-[1-[difluoro[(trifluoroethenyl)oxy]methyl
]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro-, polymer with
1,1,2,2,3,3,4,4-octafluoro-N,N'-bis(trimethylsilyl)-1,4-
butanedisulfonamide disodium salt and tetrafluoroethene (9CI) (CA
INDEX NAME)
- CM 1
- CRN 280558-74-9

CMF C10 H20 F8 N2 O4 S2 Si2 . 2 Na

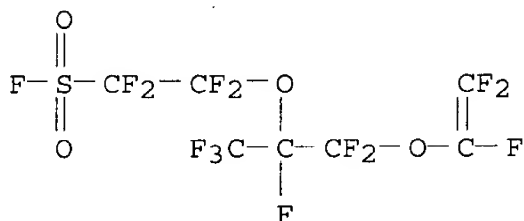


● 2 Na

CM 2

CRN 16090-14-5

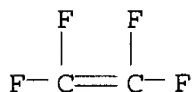
CMF C7 F14 O4 S



CM 3

CRN 116-14-3

CMF C2 F4



IC ICM H01B001-06
 ICS C25B013-08; G01N027-406; H01M008-02; C08L101-06
 CC 72-3 (Electrochemistry)
 Section cross-reference(s): 36, 52
 ST **polymer electrolyte fluoropolymer crosslink**
 IT Crosslinking agents
Polymer electrolytes
 (high heat-resistant **polymer electrolyte** of **cross-linked** fluoropolymer)
 IT Fluoropolymers, uses
 (high heat-resistant **polymer electrolyte** of

- cross-linked fluoropolymer)**
- IT 23315-99-3P, 1,4-Butanedisulfonamide 280558-73-8P
(crosslinking agent for **polymer electrolyte**)
- IT 124-41-4, Sodium methoxide 999-97-3, Hexamethyldisilazane
7664-41-7, Ammonia, reactions 122983-41-9, 1,4-Butanedisulfonyl
difluoride
(crosslinking agent for **polymer electrolyte**)
- IT 280558-75-ODP, hydrolyzed
(**polymer electrolyte**)
- L37 ANSWER (7) OF 14 HCA COPYRIGHT 2003 ACS on STN
131:145263 Crosslinked sulfonated polymers and method for preparing
same. Michot, Christophe; Armand, Michel (Hydro-Quebec, Can.). PCT
Int. Appl. WO 9938897 A1 19990805, 43 pp. DESIGNATED STATES: W:
CA, JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,
LU, MC, NL, PT, SE. (French). CODEN: PIXXD2. APPLICATION: WO
1999-CA78 19990129. PRIORITY: CA 1998-2228467 19980130; CA
1998-2236197 19980428.
- AB The invention concerns crosslinked sulfonated polymers, optionally
perfluorinated, having ionic charges on the sulfo groups and the
method for prepg. them. When they are molded in the form of
membranes, said polymers are useful in fuel cells and
electrochem. cells, in a chlorine-sodium
electrolysis process, as separator in an electrochem. prepn.
of org. and inorg. compds., as separator between an aq. phase and an
org. phase, or as catalyst for Diels-Alder addns., Friedel-Craft
reactions, aldol condensations, cationic polymn., esterification,
and acetal formation. Thus, fluorinating a Nafion 117 membrane in
the Li salt form by Me₂NSF₂ in THF, reacting the resulting membrane
having SO₂F groups 3 h in diglyme under reflux with
hexamethyldisilazane Li salt, rinsing with THF, aging the film 48 h
in THF contg. Li trimethylsilanoate, rinsing the film with water and
EtOH, and exchanging the metal ions for protons by several
immersions in 2 M HNO₃ gave a membrane with 32% of the sulfonyl
groups in the form of sulfonimide and 78% in the form of sulfonate.
- IT 4039-32-1, Hexamethyldisilazane lithium salt
(crosslinker; polymers having ionic charges on sulfo crosslinking
groups)
- RN 4039-32-1 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

*crosslinking agent
tagged not present
in final
prod.*

Me₃Si-NH-SiMe₃

● Li

- IT 235440-60-5DP, hydrolyzed, lithium or sodium salts
235440-63-8DP, reaction products with N-

trimethylsilyltrifluoromethanesulfonamide sodium salt

235440-65-0DP, hydrolyzed, lithium salts

235440-67-2DP, hydrolyzed, lithium salts

(polymers having ionic charges on sulfo crosslinking groups)

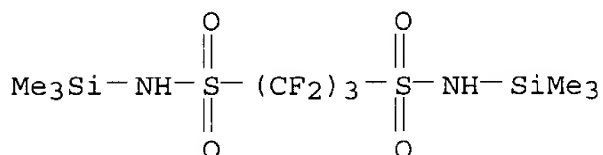
RN 235440-60-5 HCA

CN Ethanesulfonyl fluoride, 2-[1-[difluoro[(trifluoroethenyl)oxy]methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro-, polymer with 1,1,2,2,3,3-hexafluoro-N,N'-bis(trimethylsilyl)-1,3-propanedisulfonamide disodium salt and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 210542-03-3

CMF C9 H20 F6 N2 O4 S2 Si2 . 2 Na

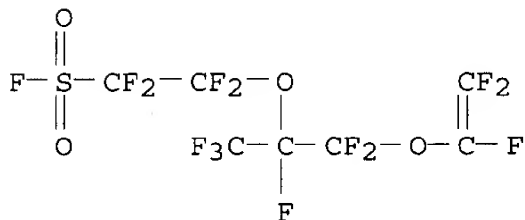


● 2 Na

CM 2

CRN 16090-14-5

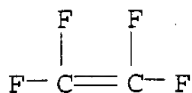
CMF C7 F14 O4 S



CM 3

CRN 116-14-3

CMF C2 F4



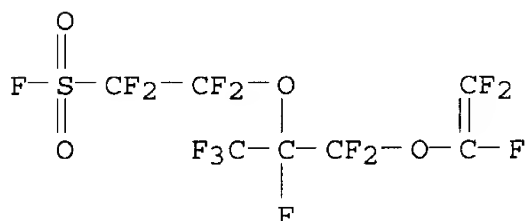
RN 235440-63-8 HCA

CN Ethanesulfonyl fluoride, 2-[1-[difluoro[(trifluoroethenyl)oxy]methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro-, polymer with tetrafluoroethene and 1,1,1-trimethyl-N-(trimethylsilyl)silamine sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 16090-14-5

CMF C7 F14 O4 S



CM 2

CRN 1070-89-9

CMF C6 H19 N Si2 . Na

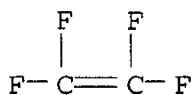


● Na

CM 3

CRN 116-14-3

CMF C2 F4



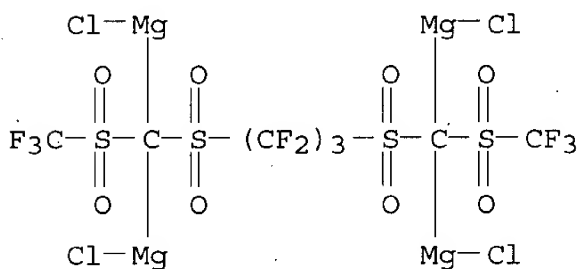
RN 235440-65-0 HCA

CN Magnesium, tetrachloro[.mu.4-[(1,1,2,2,3,3-hexafluoro-1,3-propanediyl)bis[[(trifluoromethyl)sulfonyl]methylidyne]]]tetra-, polymer with 2-[1-[difluoro[(trifluoroethenyl)oxy]methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoroethanesulfonyl fluoride, 1,1,2,2,3,3-hexafluoro-N,N'-bis(trimethylsilyl)-1,3-propanedisulfonamide disodium salt and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 235440-64-9

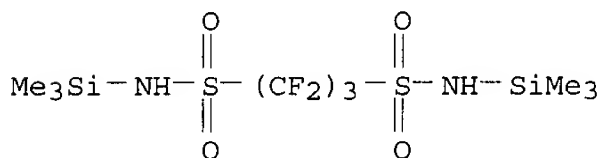
CMF C7 Cl4 F12 Mg4 O8 S4



CM 2

CRN 210542-03-3

CMF C9 H20 F6 N2 O4 S2 Si2 . 2 Na

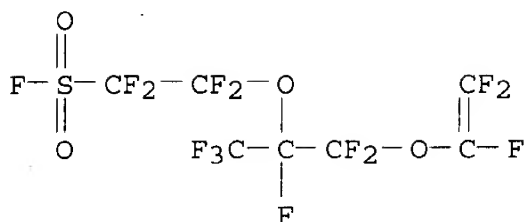


● 2 Na

CM 3

CRN 16090-14-5

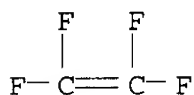
CMF C7 F14 O4 S



CM 4

CRN 116-14-3

CMF C2 F4



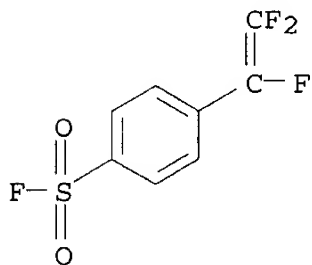
RN 235440-67-2 HCA

CN Benzenesulfonyl fluoride, 4-(trifluoroethenyl)-, polymer with
 1,1,1-trimethyl-N-(trimethylsilyl)silanamine sodium salt (9CI) (CA
 INDEX NAME)

CM 1

CRN 185848-06-0

CMF C8 H4 F4 O2 S



CM 2

CRN 1070-89-9

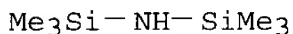
CMF C6 H19 N Si2 . Na

Me₃Si-NH-SiMe₃

● Na

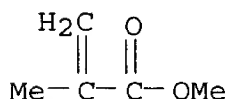
- IC ICM C08F008-44
ICS C08G081-00; C08G085-00; C08J005-22
- CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 24, 35, 67, 72
- IT **Electrolytic cells**
(sodium chloride-; polymers having ionic charges on sulfo crosslinking groups for electrolytic cells)
- IT 75-24-1, Trimethylaluminum 280-57-9, DABCO 917-54-4, Methyllithium 1070-89-9, Hexamethyldisilazane sodium salt 1299-86-1, Aluminum carbide **4039-32-1**, Hexamethyldisilazane lithium salt 7782-89-0, Lithium amide 7782-92-5, Sodium amide 7791-25-5, Sulfuryl chloride 7803-58-9, Sulfamide 17242-52-3, Potassium amide 26134-62-3, Lithium nitride 40949-94-8, Hexamethyldisilazane potassium salt 62619-91-4 84246-33-3 146829-75-6 146829-79-0 235440-76-3 235440-77-4 235440-78-5 235440-79-6 235440-80-9 235440-81-0 235764-57-5
(crosslinker; polymers having ionic charges on sulfo crosslinking groups)
- IT 91742-20-0DP, reaction products with sulfo-crosslinked polymer 235440-59-2P **235440-60-5DP**, hydrolyzed, lithium or sodium salts **235440-60-5DP**, reaction products with N-trimethylsilyltrifluoromethanesulfonamide sodium salt **235440-63-8DP**, reaction products with N-trimethylsilyltrifluoromethanesulfonamide sodium salt 235440-64-9P **235440-65-0DP**, hydrolyzed, lithium salts **235440-67-2DP**, hydrolyzed, lithium salts 235440-69-4DP, hydrolyzed, sodium salts 235440-71-8DP, hydrolyzed, lithium salts 235440-73-0DP, hydrolyzed
(polymers having ionic charges on sulfo crosslinking groups)
- L37 ANSWER (8) OF 14 HCA COPYRIGHT 2003 ACS on STN *Similar to 7?*
130:168015 Ionic perfluorosulfonimide compounds with delocalized anionic charge, and their use as components of ionic conductors or catalysts. Armand, Michel; Michot, Christophe; Yagupolskii, Yurii; Yagupolskii, Lev; Bezudny, Andrej; Kondratenko, Natalya (Acep Inc., Can.; Universite de Montreal; Centre National de la Recherche Scientifique; Institute of Organic Chemistry). PCT Int. Appl. WO 9905100 A1 19990204, 59 pp. DESIGNATED STATES: W: CA, JP, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (French). CODEN: PIXXD2. APPLICATION: WO 1998-FR1663 19980727. PRIORITY: CA 1997-2211465 19970725.

- AB The invention concerns ionic compds. of formula $[R_1X_1(:Z_1)Q-X_2(:Z_2)R_2]_m Mm^+$ [I; in which Mm^+ is a cation of valence m ; each $X_i = S:Z_3$, $S:Z_4$, PR_3 , or PR_4 ; $Q = N$, CR_5 , CCN , or CSO_2R_5 ; each $Z_i = :O$, $:NC.tplbond.N$, $:C(C.tplbond.N)_2$, $:NS(:Z)2R_6$, or $:C[S(=Z)2R_6]_2$; each $R_i = Y$, YO , YS , Y_2N , or F ; $Y =$ monovalent org. radical, or repeat unit of a polymeric fabric]. I are useful for prepg. materials with ionic conduction, **electrolytes**, as catalysts for polymn. and other org. reactions, and for doping polymers. For instance, butanesulfonyl chloride was condensed with $CF_3SO_2NH_2$ using DABCO, and the product treated with satd. KCl and $AcOH$ to give cryst. $BuSO_2N(K)SO_2CF_3$. This was treated with $(COCl)_2$ and DMF in $MeCN$, followed by treatment with $CF_3SO_2NH_2$ and DABCO, and then workup with aq. KCl and $AcOH$, to give title compd. $CF_3SO_2N-S(:O)(Bu):NSO_2CF_3 K^+$. The latter was converted to the corresponding Li^+ salt using $LiBF_4$, and the Li salt was incorporated in poly(ethylene oxide) of mass 106 to give a film with cond. $>2 \times 10^{-5} S/cm$ at 25° .
- IT **4039-32-1**, Lithium hexamethyldisilazide
(condensation with fluorosulfonimines and sulfonyl chlorides; prepn. of delocalized anionic perfluorosulfonimide derivs. as conductors and catalysts)
- RN 4039-32-1 HCA
- CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)



● Li

- IT **9011-14-7**, Polymethyl methacrylate
(solvent for sulfonimide dye salt; prepn. of delocalized anionic perfluorosulfonimide derivs. as conductors and catalysts)
- RN 9011-14-7 HCA
- CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 80-62-6
- CMF C5 H8 O2



- IC ICM C07C381-10
- ICS C07C311-48; C07F007-18; C08K005-36; G02F001-15; H01M006-16
- CC 23-12 (Aliphatic Compounds)

- Section cross-reference(s): 35, 38, 67, 76
- IT Addition reaction catalysts
Aldol condensation catalysts
Anions
Condensation reaction catalysts
Conducting polymers
Diels-Alder reaction catalysts
Electrolytes
Electron delocalization
Elimination reaction catalysts
Friedel-Crafts reaction catalysts
Isomerization catalysts
Oxidation catalysts
Polyelectrolytes
Polymerization catalysts
Primary **batteries**
Reduction catalysts
Secondary **batteries**
Solvolysis catalysts
(prepn. of delocalized anionic perfluorosulfonimide derivs. as conductors and catalysts)
- IT 1070-89-9, Sodium hexamethyldisilazide **4039-32-1**, Lithium hexamethyldisilazide 7664-41-7, Ammonia, reactions 26134-62-3, Lithium nitride 40949-94-8, Potassium hexamethyldisilazide (condensation with fluorosulfonimines and sulfonyl chlorides; prepn. of delocalized anionic perfluorosulfonimide derivs. as conductors and catalysts)
- IT 75-09-2, Dichloromethane, uses **9011-14-7**, Polymethyl methacrylate
(solvent for sulfonimide dye salt; prepn. of delocalized anionic perfluorosulfonimide derivs. as conductors and catalysts)
- L37 ANSWER 9 OF 14 HCA COPYRIGHT 2003 ACS on STN *tugged* *viewed identical to JP 11 7968*
130:141691 Proton-conductive polymer **electrolyte** for fuel cell. Hoshi, Nobuhito; Yamamoto, Fumihiko; Ikeda, Masanori (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11007969 A2 19990112 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-156944 19970613.
- AB The polymer **electrolyte** contains 10-100 wt.% of a polymer which has .gtoreq.10 wt.% of water-insol. component and is prepd. by crosslinking a crosslinkable polymer having a structural unit $[XN(Y)]_n$ (X = divalent group selected from $COCF(Z)SO_2$ and $SO_2CF(Z)CO$; Z = F, CF_3 ; Y = H, metals having .gtoreq.2 valences; 50-98% of Y is H and 2-50% of Y is metal; n = pos. integer of .gtoreq.2). Proton-conductive fuel cell using the **electrolyte** is also claimed. The polymer shows high proton cond. and is easily synthesized.
- IT **4039-32-1**, Lithium bis(trimethylsilyl)amide
(in prepn. of proton-conductive polymer contg. amide groups and multivalent metals for fuel cell **electrolytes**)
- RN 4039-32-1 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

$\text{Me}_3\text{Si}-\text{NH}-\text{SiMe}_3$

● Li

- IC ICM H01M008-02
ICS C08J005-22; H01M008-10
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 76
- ST fuel **cell electrolyte** amide polymer; metal imide
polymer fuel **cell electrolyte**; proton conductor
fuel **cell electrolyte**
- IT Ionic conductors
(proton, polymeric; proton-conductive polymer contg. amide groups
and multivalent metals for fuel **cell electrolytes**)
- IT Fuel **cell electrolytes**
(proton-conductive polymer contg. amide groups and multivalent
metals for fuel **cell electrolytes**)
- IT Polyamides, uses
Polysulfones, uses
(proton-conductive polymer contg. amide groups and multivalent
metals for fuel **cell electrolytes**)
- IT Conducting polymers
(protonic; proton-conductive polymer contg. amide groups and
multivalent metals for fuel **cell electrolytes**
)
- IT 197378-70-4DP, Fluorosulfonyldifluoroacetyl fluoride-lithium
bis(trimethylsilyl)amide copolymer, hydrolyzed, multivalent metal
salts
(**electrolytes**; proton-conductive polymer contg. amide
groups and multivalent metals for fuel **cell electrolytes**)
- IT 677-67-8P, Fluorosulfonyldifluoroacetyl fluoride 697-18-7P
197378-70-4P, Fluorosulfonyldifluoroacetyl fluoride-lithium
bis(trimethylsilyl)amide copolymer
(in prepn. of proton-conductive polymer contg. amide groups and
multivalent metals for fuel **cell electrolytes**
)
- IT 116-14-3, Tetrafluoroethylene, reactions 142-72-3, Magnesium
acetate 4039-32-1, Lithium bis(trimethylsilyl)amide
(in prepn. of proton-conductive polymer contg. amide groups and
multivalent metals for fuel **cell electrolytes**
)

127:21063 Lithium ion secondary **batteries** with improved **electrolytes**. Takizawa, Makoto; Moriyoshi, Hiko; Ikeda, Masanori (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09106834 A2 19970422 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-263116 19951011.

AB Claimed **batteries**, using Li ion-intercalating C anodes and Li-contg. transition metal chalcogenide cathodes, comprise **electrolyte** solns. contg. bis(fluoroalkylsulfonyl)imidelithium (C>2 alkyl). The **batteries** have high capacity and cyclic stability.

IT 4039-32-1, Lithium bis(trimethylsilyl)amide (fluoroalkylsulfonylimidelithium from; **electrolytes** for lithium ion **batteries**)

RN 4039-32-1 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI) (CA INDEX NAME)

Me₃Si-NH-SiMe₃

O Li

IC ICM H01M010-40
ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium fluoroalkylsulfonylimide **battery electrolyte**

IT **Battery electrolytes**
(**electrolytes** contg. fluoroalkylsulfonylimidelithium for Li ion **batteries** with capacity and cyclic stability)

IT Secondary **batteries**
(lithium; lithium ion **batteries** contg. fluoroalkylsulfonylimidelithium for capacity and cyclic stability)

IT 119229-99-1P
(**electrolytes** contg. fluoroalkylsulfonylimidelithium for Li ion **batteries** with capacity and cyclic stability)

IT 375-72-4, Perfluoro-1-butanesulfonyl fluoride 4039-32-1, Lithium bis(trimethylsilyl)amide (fluoroalkylsulfonylimidelithium from; **electrolytes** for lithium ion **batteries**)

L37 ANSWER (11) OF 14 HCA COPYRIGHT 2003 ACS on STN VP

118:265736 Electrochemical devices and manufacture thereof. Yamaga, Noriyuki; Hatai, Takashi; Kusanagi, Shigekazu (Matsushita Electric Works, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04357451 A2 19921210 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP

1990-340444 19901130.

AB In an electrochem. device having a plural no. of electrodes on an insulator base plate and a layer of solid electrolyte on the electrode, the solid **electrolyte** comprises plasma **polymers** (preferably, contg. anion exchange group). The title method comprises plasma polymn. for prepn. of the solid electrolyte.

IT 148061-79-4

(plasma polymn. of, on electrodes-contg. base plate, electrochem. sensor from)

RN 148061-79-4 HCA

CN Silanamine, 1-ethenyl-N,N,1-trimethyl- (9CI) (CA INDEX NAME)

NMe₂Me-SiH-CH=CH₂

IC ICM G01N027-416

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 35, 36

ST solid electrolyte electrochem device; carbon monoxide electrochem sensor; plasma **polymer** solid **electrolyte** sensor

IT Sensors

(gas, electrochem., plasma **polymer** solid **electrolyte** for, manuf. of)

IT 2083-91-2, Trimethylsilyldimethylamine 148061-79-4

(plasma polymn. of, on electrodes-contg. base plate, electrochem. sensor from)

L37 ANSWER (12) OF 14 HCA COPYRIGHT 2003 ACS on STN

113:131568 Method for the synthesis of sulfonylimidides useful in electric conductors. Armand, Michel (Societe Nationale Elf Aquitaine (SNEA), Fr.; Hydro-Quebec). Eur. Pat. Appl. EP 364340 A1 19900418, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1989-402744 19891004. PRIORITY: FR 1988-13005 19881005.

AB Title salts [(RSO₂)₂N]_yM [I; M = metal, N(R₁)₄; R = C₁-2 org. radical; R₁ = H, C₁-8 hydrocarbyl; y = valence of M] are prepd. by reaction of (1) a silazane [(R₂)₃Si]₂N]_yM (R₂ = C₁-4 alkyl) or an assocn. of a silazane [(R₂)₃Si]₂NA [A = H, Si(R₂)₃] and a fluoride salt M₁F_z (M₁ selected from M groups; z = valence of M₁), with (2) .gtoreq. 1 sulfonyl fluoride RSO₂F or assocn. of a sulfonyl chloride RSO₂Cl and M₁F_z. I (R = perfluoroalkyl, M = esp. Li) are useful in assocn. with polyethers for prepn. of elec. conductive solid solns. for all-solid, thin-film, primary and secondary **batteries**. Thus, slow addn. of 30.4 g CF₃SO₂F to 100 mL 1M (Me₃Si)₂NLi in THF at -18.degree., followed by stirring, evapn. and washing with CH₂Cl₂, gave 26 g (CF₃SO₂)₂NLi (II). A soln. of 2.9 g II and 4.4 g ethylene oxide polymer in MeCN was evapd. to give an amorphous elastic film of 220 .mu.m thickness and ionic cond. 2 .times. 10⁵ .OMEGA.⁻¹ cm⁻¹. Eleven addnl. syntheses are described.

IT 4039-32-1, Hexamethyldisilazane lithium salt
(reaction of, with sulfonyl halides, in prepn. of
sulfonylimidides useful in elec. conductors)
RN 4039-32-1 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Li

IC ICM C07C311-48
CC 23-12 (Aliphatic Compounds)
Section cross-reference(s): 76
IT Cathodes
(**battery**, metal sulfonylimidides in polyethers)
IT 999-97-3 1070-89-9, Sodium bis(trimethylsilyl)amide
4039-32-1, Hexamethyldisilazane lithium salt 40949-94-8
57915-58-9, Nonamethyltrisilazane
(reaction of, with sulfonyl halides, in prepn. of
sulfonylimidides useful in elec. conductors)

L37 ANSWER (13) OF 14 HCA COPYRIGHT 2003 ACS on STN
106:26654 **Electrolytic** capacitors. Phillips, Jeffrey (United
Chemi-Con, Inc., USA). Eur. Pat. Appl. EP 186390 A2 19860702, 18
pp. DESIGNATED STATES: R: DE, FR, GB, NL. (English). CODEN:
EPXXDW. APPLICATION: EP 1985-309052 19851212. PRIORITY: US
1984-681462 19841214.

AB An elec. capacitor comprises a pos. metal/metal oxide electrode, a
neg. Li or Li alloy electrode, a separator material phys. sepg. the
pos. and neg. electrodes and capable of allowing ionic travel from 1
electrode to the other, and a Li ion-contg. nonaq.
electrolyte contacting and compatible with both electrodes.
Application of the **electrolytic** capacitor as a back-up
power source for memory devices is indicated.

IT 4039-32-1
(solutes, in **electrolytic** capacitors)
RN 4039-32-1 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Li

IC ICM H01G009-04
ICS H01G009-02
CC 76-10 (Electric Phenomena)
ST lithium electrode **electrolytic** capacitor
IT Memory devices
(**electrolytic** capacitors as back-up power sources for)
IT Electric capacitors
(**electrolytic**, lithium or lithium alloy electrodes for)
IT Lithium alloy, base
(electrodes, for **electrolytic** capacitors)
IT 1344-28-1, Aluminum oxide, uses and miscellaneous 7440-03-1, uses
and miscellaneous 7440-25-7, uses and miscellaneous 7440-32-6,
uses and miscellaneous 7440-67-7, uses and miscellaneous
12627-00-8 51745-87-0 53801-45-9 59763-75-6
(electrodes contg., for **electrolytic** capacitors)
IT 7429-90-5, uses and miscellaneous 7439-93-2, uses and
miscellaneous 12798-95-7 65777-94-8 68848-64-6
(electrodes, for **electrolytic** capacitors)
IT 553-54-8, Lithium benzoate 2408-36-8, Lithium cyanide
4039-32-1 14283-07-9, Lithium tetrafluoroborate
14485-20-2, Lithium tetraphenylborate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
(solutes, in **electrolytic** capacitors)

L37 ANSWER (14) OF 14 HCA COPYRIGHT 2003 ACS on STN *as solute*
101:195275 **Battery** with polymer electrode. (Hitachi, Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 59119682 A2 19840710 Showa, 9 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-226560 19821227.
AB A **battery** having anode and/or cathode composed of polymer
having conjugated double bonds in main chain, which may be doped,
uses an **electrolyte** salt $MN(SiR_3)_2$ ($R = C1-15$ alkyl, $C6-15$
aryl; $M =$ alkali metal) dissolved in nonpolar solvent. The use of
the salt provides high energy d., stable voltage, reduced
self-discharge, and long cycle life. Thus, C_2H_2 was polymd. at
-78.degree. by using $Ti(OBu)_4$ and Et_3Al catalysts. The product with
fibril structure was dried to obtain red-purple film, which was cut
to size and attached to Pt wire collector. A **battery**
having 2 polyacetylene [25067-58-7] electrodes and $M LiN(SiMe_3)_2$ [
4039-32-1] in hexane as **electrolyte** was
constructed, and charged to 6% doping. Charge-discharge cycles were
repeated 421 times.
IT 4039-32-1
(**battery electrolyte**, polyacetylene)
RN 4039-32-1 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt (9CI)
(CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Li

IC H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polyacetylene **battery** lithium bistrimethylsilylamine;
battery polymer electrode; lithium bistrialkylsilylamine
battery electrode
IT **Batteries**, secondary
(polyacetylene, with alkali metal bistrialkylsilylamine-nonpolar
solvent **electrolyte**, performance of)
IT 4039-32-1 40949-94-8
(**battery electrolyte**, polyacetylene)
IT 25067-58-7 25190-62-9 51325-05-4
(**battery**, contg. alkali metal bistrialkylsilylamine-
nonpolar solvent **electrolyte**, performance of)

=> d 138 1-12 cbib abs hitstr hitind

B.D.

L38 ANSWER (1) OF 12 HCA COPYRIGHT 2003 ACS on STN
139:247997 **Polymer solid electrolyte** from
polymer having anionic group and crosslinked polymer and
fuel cell using the same. Kono, Satoshi; Kitai, Masayuki; Ohara,
Takehiro; Nakamura, Masataka (Toray Industries, Inc., Japan). Jpn.
Kokai Tokkyo Koho JP 2003257453 A2 20030912, 24 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2002-380322 20021227. PRIORITY: JP
2001-396480 20011227.
AB The **polymer solid electrolyte** has an inside
penetration polymer mesh structure formed from a polymer having an
anion group and a 3-D crosslinked polymer contg. a non-carbon
element as a crosslinking point. The non-carbon element may be Si,
Ti, Zr, Al, B, and/or P. The fuel cell comprises a porous substrate
impregnated with above electrolyte. The fuel cell uses a methanol
aq. soln. as a fuel. The **polymer solid**
electrolyte exhibited little methanol crossover.
IT 999-97-3, Hexamethyldisilazane
(**polymer solid electrolyte** from
polymer having anionic group and crosslinked polymer for
fuel cell)
RN 999-97-3 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX
NAME)

Me₃Si-NH-SiMe₃

- IC ICM H01M008-02
- ICS C08J003-24; H01B001-06; H01M008-10; C08L101-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- Section cross-reference(s): 35, 38, 72
- ST **polymer solid electrolyte anionic crosslinked fuel cell**
- IT Polyimides, uses
 - (carboxy-contg.; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Polyoxyalkylenes, uses
 - (fluorine- and sulfo-contg., ionomers; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Polyketones
- Polysulfones, uses
 - (polyether-; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Polyethers, uses
 - (polyketone-; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Fuel cells
- Polymer electrolytes**
 - (**polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Polyoxyphenylenes
 - (**polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Fluoropolymers, uses
 - (polyoxyalkylene-, sulfo-contg., ionomers; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Ionomers
 - (polyoxyalkylenes, fluorine- and sulfo-contg.; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT Polyethers, uses
 - (polysulfone-; **polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for fuel cell)
- IT 591-80-0, 4-Pentenoic acid 625-38-7, 3-Butenoic acid 999-97-3, Hexamethyldisilazane 2487-90-3, Trimethoxysilane
 - (**polymer solid electrolyte** from **polymer** having anionic group and crosslinked polymer for

- fuel cell)
- IT 13688-54-5P 23523-56-0P
(polymer solid electrolyte from
polymer having anionic group and crosslinked polymer for
fuel cell)
- IT 757-44-8P 12002-26-5P, Tetramethoxysilane homopolymer
89885-26-7P, Phenyltrimethoxysilane homopolymer
121536-62-7P 156247-99-3P 171773-83-4P, Triethoxysilane
homopolymer 597539-44-1P 597539-46-3P 597539-47-4P
597539-48-5P 597539-50-9P 597539-51-0P
(polymer solid electrolyte from
polymer having anionic group and crosslinked polymer for
fuel cell)
- IT 121-43-7, Trimethoxyboron 9041-80-9, Polyphenylene oxide
24938-67-8, YPX-100L 27028-97-3, Polyphenylene sulfide sulfone
28212-48-8 37317-24-1, Tetrabutoxysilane homopolymer
41996-90-1, Methoxyaluminum dichloride
(polymer solid electrolyte from
polymer having anionic group and crosslinked polymer for
fuel cell)

L38 ANSWER (2) OF 12 HCA COPYRIGHT 2003 ACS on STN B. D.
139:199952 Method of preparation of ionic conductor including a polymer
containing carbon clusters for electrochemical devices. Hinokuma,
Koichiro; Pietzak, Bjoern; Rost, Constance Gertrud; Ata, Masafumi;
Li, Yongming; Fukushima, Kazuaki (Japan). U.S. Pat. Appl. Publ. US
2003157388 A1 20030821, 25 pp., Cont.-in-part of U.S. Ser. No.
171,930. (English). CODEN: USXXCO. APPLICATION: US 2002-280941
20021025. PRIORITY: JP 1999-204038 19990719; US 1999-396866
19990915; JP 2000-58116 20000303; JP 2000-157509 20000529; US
2000-619166 20000719; US 2002-171930 20020614; JP 2002-210428
20020719.

AB An ionic conductor, such as a proton conductor, a process for prodn.
thereof, and an electrochem. device, such as fuel cell, that
includes the ionic conductor is provided. The ionic conductor of
the present invention is formed from a polymer in which carbon
clusters having ion dissocg. functional groups are bonded to each
other through connecting groups which can also include one or more
ion dissocg. functional groups. In this regard, the polymer is less
water-sol. and more chem. stable than a deriv. composed solely of
carbon clusters, thus displaying enhanced ionic conduction
properties.

IT 999-97-3, Bis(trimethylsilyl)amine
(crosslinking agent; method of prepn. of ionic conductor
including polymer contg. carbon clusters for electrochem.
devices)

RN 999-97-3 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX
NAME)



IC ICM H01M008-10
ICS H01M010-40; C08J005-20

NCL 429033000; 429314000; 429317000; 521025000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76

ST fuel **cell electrolyte** ionic conductor
polymer carbon cluster; electrochem device
electrolyte ionic conductor **polymer** carbon
cluster; fullerene polymer ionic conductor electrochem device

IT Fuel **cell electrolytes**
Ionic conductivity
Solid state fuel cells
(method of prepn. of ionic conductor including polymer contg.
carbon clusters for electrochem. devices)

IT 75-13-8D, Isocyanic acid, esters, polymers **999-97-3**,
Bis(trimethylsilyl)amine
(crosslinking agent; method of prepn. of ionic conductor
including polymer contg. carbon clusters for electrochem.
devices)

L38 ANSWER **3** OF 12 HCA COPYRIGHT 2003 ACS on STN **B, D.**
138:388231 Ion-exchange resin films, their manufacture, and their use as
polymer electrolyte fuel cell
diaphragms, and **polymer electrolyte fuel**
cells. Kawahara, Takeo; Fukuda, Kenji; Isomura, Takenori
(Tokuyama Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003157862 A2
20030530, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2001-354405 20011120.

AB Ion-exchange resin films made of supports having layers of
hydrocarbon ion-exchange resins and inorg. fillers having
hydrophobic surfaces are claimed. Manuf. of the films include
application of an org. suspension of inorg. fillers, pretreated to
obtain hydrophobic surfaces and hydrocarbon ion-exchange resin
(precursors) on a support and optional step for conversion of
precursors into resins. Monomer raw materials for the resins may be
used instead of the resins. Fuel cells showing stable power output
are obtained by use of films having high strength.

IT **999-97-3**, Hexamethyldisilazane
(silica treated with; manuf. of hydrocarbon ion-exchange
membranes contg. inorg. fillers having hydrophobic surfaces for
use in **polymer electrolyte fuel cells**
)

RN **999-97-3** HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX
NAME)



IC ICM H01M008-02
ICS C08J005-22; C08K009-04; C08L101-00; H01M008-10

- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
- ST hydrocarbon ion exchange resin fuel cell diaphragm; **polymer electrolyte fuel cell** diaphragm ion exchanger;
hydrophobic inorg filler ion exchange film
- IT Fillers
(inorg.; manuf. of hydrocarbon ion-exchange membranes contg.
inorg. fillers having hydrophobic surfaces for use in
polymer electrolyte fuel cells)
- IT Ion exchange membranes
(manuf. of hydrocarbon ion-exchange membranes contg. inorg.
fillers having hydrophobic surfaces for use in **polymer electrolyte fuel cells**)
- IT Solid state fuel cells
(**polymer electrolyte**; manuf. of hydrocarbon
ion-exchange membranes contg. inorg. fillers having hydrophobic
surfaces for use in **polymer electrolyte fuel cells**)
- IT Polysiloxanes, uses
(silica treated with; manuf. of hydrocarbon ion-exchange
membranes contg. inorg. fillers having hydrophobic surfaces for
use in **polymer electrolyte fuel cells**
)
- IT 31900-57-9, Polydimethylsiloxane
(assumed monomer, silica treated with; manuf. of hydrocarbon
ion-exchange membranes contg. inorg. fillers having hydrophobic
surfaces for use in **polymer electrolyte fuel cells**)
- IT 9003-70-7, Divinylbenzene-styrene copolymer
(manuf. of hydrocarbon ion-exchange membranes contg. inorg.
fillers having hydrophobic surfaces for use in **polymer electrolyte fuel cells**)
- IT 75-78-5, Dimethyldichlorosilane 999-97-3,
Hexamethyldisilazane 9016-00-6, Polydimethylsiloxane
(silica treated with; manuf. of hydrocarbon ion-exchange
membranes contg. inorg. fillers having hydrophobic surfaces for
use in **polymer electrolyte fuel cells**
)
- IT 106108-28-5, Butylene-ethylene-styrene block copolymer
(triblock; manuf. of hydrocarbon ion-exchange membranes contg.
inorg. fillers having hydrophobic surfaces for use in
polymer electrolyte fuel cells)
- IT 7631-86-9, Silica, uses
(with hydrophobic surface; manuf. of hydrocarbon ion-exchange
membranes contg. inorg. fillers having hydrophobic surfaces for
use in **polymer electrolyte fuel cells**
)

L38 ANSWER (4) OF 12 HCA COPYRIGHT 2003 ACS on STN

138:356263 **polymer electrolyte fuel-cell**

separator sealing rubber composition. Meguriya, Noriuyuki; Taira,
Yujiro (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP

No

1311011 A2 20030514, 12 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-257821 20021112. PRIORITY: JP 2001-345845 20011112; JP 2002-52812 20020228.

- AB A rubber compn. contains an organopolysiloxane having at least two alkenyl radicals, an organohydrogenpolysiloxane having at least three Si-H radicals, a catalyst and optionally, fumed silica and an acid resistant inorg. filler. On a periphery of one side of a **polymer electrolyte fuel-cell** separator, the compn. forms a seal member which allows for little leaching of non-functional organopolysiloxane fraction and has improved acid resistance and compression set.
- IT 999-97-3, Hexamethyldisilazane
(**polymer electrolyte fuel-cell** separator sealing rubber compn.)
- RN 999-97-3 HCA
- CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

$\text{Me}_3\text{Si}-\text{NH}-\text{SiMe}_3$

- IC ICM H01M002-08
ICS H01M008-02
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 39
- ST **polymer electrolyte fuel cell**
separator sealing rubber compn
- IT Polysiloxanes, uses
(Me hydrogen; **polymer electrolyte fuel-cell** separator sealing rubber compn.)
- IT Molding of plastics and rubbers
(compression; **polymer electrolyte fuel-cell** separator sealing rubber compn.)
- IT Coating process
(dip; **polymer electrolyte fuel-cell** separator sealing rubber compn.)
- IT Polysiloxanes, uses
(hydrogen; **polymer electrolyte fuel-cell** separator sealing rubber compn.)
- IT Molding
(injection; **polymer electrolyte fuel-cell** separator sealing rubber compn.)
- IT Addition reaction catalysts
Casting process
Fuel cell separators
Screen printing
Sealing compositions
Solid state fuel cells
(**polymer electrolyte fuel-cell** separator sealing rubber compn.)

- IT Clays, uses
Diatomite
Mica-group minerals, uses
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT Polysiloxanes, uses
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT Rubber, uses
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT Silicone rubber, uses
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT Molding
 (transfer; polymer electrolyte fuel-
 cell separator sealing rubber compn.)
- IT 7631-86-9, Fumed silica, uses
 (colloidal; polymer electrolyte fuel-
 cell separator sealing rubber compn.)
- IT 14808-60-7, Quartz, uses
 (flour; polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT 7440-06-4, Platinum, uses
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT 1332-37-2, Iron oxide, uses 1344-28-1, Alumina, uses 7727-43-7,
Barium sulfate 13463-67-7, Titanium oxide, uses 14807-96-6,
Talc, uses 21645-51-2, Aluminum hydroxide, uses 60842-32-2,
Aerosil R972 139351-18-1, Aerosil R-974
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)
- IT 107-21-1, Ethylene glycol, uses 999-97-3,
Hexamethyldisilazane 9016-00-6D, Dimethylpolysiloxane,
vinyl-terminated
 (polymer electrolyte fuel-cell
 separator sealing rubber compn.)

L38 ANSWER (5) OF 12 HCA COPYRIGHT 2003 ACS on STN

136:121089 Patterned electrolyte membranes with high durability.

Tanaka, Hiromitsu; Hasegawa, Naoki; Nakano, Mitsuru; Usuki,
Arimitsu; Kawakado, Masaya; Morimoto, Tomo; Kawahara, Kazuo (Toyota
Central Research and Development Laboratories, Inc., Japan). Jpn.
Kokai Tokyo Koho JP 2002025582 A2 20020125, 7 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2000-204526 20000706.

AB The electrolyte membranes, useful for **polymer
electrolyte fuel cells, electrolyzers, O**
concentrators, sensors, etc., have different physicochem. properties
at specific portions. Thus, Nafion 115F (electrolyte membrane) was
covered with a patterned mask and treated with Li
bis(trimethylsilyl)amide for crosslinking of unmasked portions and
hydrolyzed to give a patterned electrolyte membrane. A fuel cell

Bad late! looks highly relevant

using the membrane showed no gas leakage after humidifying-drying cycles.

IT **391253-28-4DP**, hydrolyzed
(patterned electrolyte membranes with high durability useful for fuel cells)

RN 391253-28-4 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt, polymer with Nafion 115F (9CI) (CA INDEX NAME)

CM 1

CRN 391252-65-6

CMF Unspecified

CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 4039-32-1

CMF C6 H19 N Si2 . Li

Me₃Si-NH-SiMe₃

● Li

IC ICM H01M008-02

ICS C25B013-08; H01B001-06

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST patterned **electrolyte** membrane **crosslinking** fuel cell

IT Conducting **polymers**

(ionic; patterned **electrolyte** membranes with high durability useful for fuel cells)

IT **Crosslinking**

Fuel cell **electrolytes**

Polymer electrolytes

(patterned **electrolyte** membranes with high durability useful for fuel cells)

IT Ionic conductors

(**polymeric**; patterned **electrolyte** membranes with high durability useful for fuel cells)

IT 100-42-5DP, Styrene, polymers, sulfonated, chlorinated, reaction products with diethanolamine sodium salt 133165-11-4DP, reaction products with chlorinated sulfonated styrene **polymers**

(**crosslinked**; patterned **electrolyte** membranes with high durability useful for fuel cells)

IT 197895-58-2DP, Ethylene-styrene-tetrafluoroethylene graft copolymer,

sulfonated, hydrolyzed 391253-28-4DP, hydrolyzed
(patterned electrolyte membranes with high durability useful for
fuel cells)

L38 ANSWER 6 OF 12 HCA COPYRIGHT 2003 ACS on STN

133:255007 Proton-conductive fuel cells containing perfluorosulfonic
acid **polymer electrolytes**. Kimoto, Kyoji
(Mirenu Corporation Y. K., Japan). Jpn. Kokai Tokkyo Koho JP
2000268834 A2 20000929, 9 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1999-67050 19990312.

AB The fuel cells comprise solid **polymer electrolytes**
contg. perfluorosulfonic acid membranes having repeating units (A)
CF₂CF₂ and (B) CF₂CF[O(CF₂)₃SO₃H], where ratio of repeating units
(A)/(B) = 1.5-10. Preferably, the fuel cells comprise electrode
catalyst coatings contg. **crosslinked polymer**
electrolyte (XNY)_p (X = COCF₂CF₂SO₂; SO₂CF₂CF₂CO,
SO₂CF₂CF₂SO₂; Y is H or .gtoreq.2 valent metal; p is .gtoreq.2
integer). The fuel cells are obtained at low prodn. cost and
provide high energy efficiency.

IT 295788-83-9DP, hydrolyzed, magnesium salts
(coatings, for electrode catalysts; proton-conductive fuel cells
contg. perfluorosulfonic acid **polymer**
electrolytes)

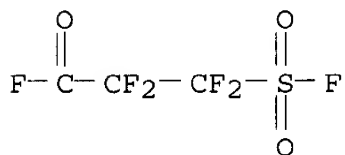
RN 295788-83-9 HCA

CN Propanoyl fluoride, 2,2,3,3-tetrafluoro-3-(fluorosulfonyl)-, polymer
with 1,1,1-trimethyl-N-(trimethylsilyl)silanamine lithium salt (9CI)
(CA INDEX NAME)

CM 1

CRN 77545-05-2

CMF C3 F6 O3 S



CM 2

CRN 4039-32-1

CMF C6 H19 N Si2 . Li



● Li

- IC ICM H01M008-02
ICS C08J005-22; C08L071-00; H01B001-06; H01M008-10
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
- ST proton conductive perfluorosulfonic acid **polymer electrolyte fuel cell**; fluoropolymer **electrolyte fuel cell**
- IT Sulfonic acids, uses
Sulfonic acids, uses
(perfluoro; proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT Ionic conductors
(polymeric; proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT Fuel cell electrodes
Fuel **cell electrolytes**
Solid state fuel cells
(proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT Fluoropolymers, uses
(proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT Conducting polymers
(protonic; proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT Perfluoro compounds
Perfluoro compounds
(sulfonic acids; proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT 295788-83-9DP, hydrolyzed, magnesium salts
(coatings, for electrode catalysts; proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)
- IT 77416-85-4DP, hydrolyzed
(proton-conductive fuel cells contg. perfluorosulfonic acid **polymer electrolytes**)

L38 ANSWER 7 OF 12 HCA COPYRIGHT 2003 ACS on STN *looks good?*
130:141697 New functional ionic conductive macromolecules, macromolecular **electrolytes** and fuel **cells** using them. Hoshi, Nobuto; Yamamoto, Fumihiko; Ikeda, Masanori (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11007968 A2 19990112 Heisei, 10 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1997-156943 19970613.

- AB Polymers having the following structural units are claimed; [XN(Y)]_a
 [X = divalent group selected from CO[CF(CF₃)OCF₂]aCF(Z)SO₂,
 SO₂CF(Z)[CF₂OCF(CF₃)]aCO; Z = F, CF₃; Y = alkali metal, alk. earth
 metal, transition metal, rare earth metal, ammonium, H; a = integer
 of 1-5; n = pos. integer of .gtoreq.2]. Macromol. electrolytes
 contg. 10-100 wt.% of the claimed polymers are also claimed.
 Macromol. electrolytes for proton-conductive fuel cells contain
 10-100 wt.% of the claimed polymers. Fuel **cells**
 comprising the **electrolytes** are also claimed. The
 electrolytes show high ionic cond. and are easily processed.
- IT **40949-94-8P**, Potassium bis(trimethylsilyl)amide
 (in prepn. of proton-conductive polymers having sulfonamide
 and/or carboxyamide groups for electrolytes for batteres and fuel
 cells)
- RN 40949-94-8 HCA
- CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, potassium salt
 (9CI) (CA INDEX NAME)

Me₃Si-NH-SiMe₃

● K

- IT **1070-89-9P**, Sodium bis(trimethylsilyl)amide
 (proton-conductive polymers having sulfonamide and/or
 carboxyamide groups for electrolytes for batteres and fuel cells)
- RN 1070-89-9 HCA
- CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, sodium salt (8CI,
 9CI) (CA INDEX NAME)

Me₃Si-NH-SiMe₃

● Na

- IC ICM H01M008-02
 ICS C08L079-00; H01M008-10
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 35, 76
- ST proton conductive polyether fuel **cell electrolyte**
 ; **battery** electrolyte proton conductive polyether;
 sulfonamide **polymer** proton conductor **electrolyte**
 ; amide **polymer** ionic conductor **electrolyte**
- IT **Battery electrolytes**
Fuel cell electrolytes

Polymer electrolytes

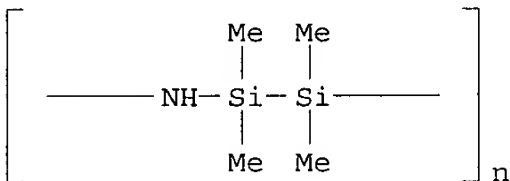
- (proton-conductive **polymers** having sulfonamide and/or carboxyamide groups for electrolytes for batteries and fuel cells)
- IT 40949-94-8P, Potassium bis(trimethylsilyl)amide
(in prepn. of proton-conductive polymers having sulfonamide and/or carboxyamide groups for electrolytes for batteries and fuel cells)
- IT 1070-89-9P, Sodium bis(trimethylsilyl)amide 157771-43-2DP, hydrolyzed, salts
(proton-conductive polymers having sulfonamide and/or carboxyamide groups for electrolytes for batteries and fuel cells)

L38 ANSWER 8 OF 12 HCA COPYRIGHT 2003 ACS on STN
129:163907 Secondary **batteries** with electrodes containing inorganic binders and **battery** arrays and devices using the **batteries**. Nishimura, Katsunori; Goto, Akihiko; Ando, Hisashi; Muranaka, Kiyoshi (Hitachi, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10208747 A2 19980807 Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-15029 19970129.

- AB The **batteries** use cathodes and anodes contg. inorg. binders having a linear or network structure and nonaq., solid, or gelled electrolytes. Preferably the binder has B-B, Si-Si, S-S, Se-Se, S-Se, B-C, B-N, B-P, B-Si, B-S, Al-N, Al-C, Si-N, Si-C, P-N, P-S, and/or S:N bonding and the **batteries** are Li **batteries**. The **battery** arrays have the **batteries** connected in series and/or in parallel. The devices are elec. automobiles and other elec. devices.

- IT 210828-21-0
(inorg. binders for electrodes in secondary lithium **batteries**)

RN 210828-21-0 HCA
CN Poly[imino(1,1,2,2-tetramethyl-1,2-disilanediy)] (9CI) (CA INDEX NAME)



- IC ICM H01M004-62
ICS A61G005-04; H01M002-10; H01M004-02; H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST secondary lithium **battery** electrode inorg binder
- IT Electric vehicles
(automobiles; inorg. binders for electrodes in secondary lithium **batteries** for elec. automobiles)
- IT Automobiles
(elec.; inorg. binders for electrodes in secondary lithium **batteries** for elec. automobiles)

- IT **Battery electrodes**
Binders
(inorg. binders for electrodes in secondary lithium **batteries**)
- IT Secondary **batteries**
(lithium; inorg. binders for electrodes in secondary lithium **batteries**)
- IT 7782-42-5, Graphite, uses 12190-79-3, Cobalt lithium oxide (CoLiO₂) 21972-67-8D, 1,3,5,2,4,6-Triphosphatriborinane, derivs., polymers 25722-25-2, Poly[(dimethylsilylene)(methylene)] 28883-63-8, Poly(dimethylsilylene) 32007-38-8, Poly[nitrilo(dimethylphosphoranylidene)] 210828-17-4, Poly(2,4-cyclopentadien-1-ylborylene) 210828-18-5, Poly[(butylimino)(phenylborylene)] 210828-19-6, Poly[(dimethylsilylene)(methylborylene)] 210828-20-9, Poly[imino[(diethylamino)aluminio]] **210828-21-0**
(inorg. binders for electrodes in secondary lithium **batteries**)
- L38 ANSWER 9 OF 12 HCA COPYRIGHT 2003 ACS on STN *int. product?*
129:136658 **Polymer solid electrolytes** having high ionic conductivity and no internal resistance increase and secondary **batteries** using the same. Nakashima, Takehiko; Yamamoto, Takashi (Toyota Motor Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10168194 A2 19980623 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-329795 19961210.
- AB The title electrolytes are alkali metal salts having electron-withdrawing groups in the polymer main chain. H₂NSO₂(CF₂)₃SO₂NH₂ was obtained from ammonia and FSO₂(CF₂)₃SO₂F, treated with Na to obtain NaHSO₂(CF₂)₃SO₂NHNa which was then treated with (Me₃Si)₂NH to obtain Me₃SiN(Na)SO₂(CF₂)₃SO₂N(Na)SiMe₃, which was cooled in dioxane at -192.degree., evacuated with vacuum distn. of FSO₂(CF₂)₃SO₂F, and stirred at 110.degree. for 3 h to obtain -[SO₂N(Na)SO₂(CF₂)₃]_n-, which was treated with conc. H₂SO₄ to obtain -[SO₂NHSO₂(CF₂)₃]_n-, then treated with LiOMe to obtain -[SO₂N(Li)SO₂(CF₂)₃]_n-.
- IT 999-97-3
(polymer solid electrolytes having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- RN 999-97-3 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)



- IC ICM C08G075-20
ICS C08G063-692; C08G067-00; C08G075-24; C08G077-48; C08G079-02; H01M010-40
- CC 35-6 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 52, 76

- ST **polymer solid electrolyte; lithium secondary battery polymer solid electrolyte**
- IT Polysulfones, preparation
Polysulfones, preparation
(fluorine-contg.; **polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT Secondary **batteries**
(lithium; **polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT Solid **electrolytes**
(**polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT Polysulfones, preparation
(**polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT Fluoropolymers, preparation
Fluoropolymers, preparation
(polysulfone-; **polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT 210542-05-5P 210542-07-7P 210542-10-2P 210542-11-3P
210542-12-4P
(**polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT 421-82-9P 210542-01-1P 210542-02-2P 210542-03-3P
210542-04-4P 210542-06-6P 210542-08-8P 210542-09-9P
210542-13-5P 210542-15-7P 210574-67-7P
(**polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)
- IT 335-05-7, Trifluoromethanesulfonyl fluoride 676-58-4,
Methylmagnesium chloride 865-34-9, Lithium methoxide
999-97-3 7440-23-5, Sodium, reactions 7664-41-7,
Ammonia, reactions 82727-16-0, 1,3-Perfluoropropanedisulfonyl
fluoride 84246-31-1, 1,4-Perfluorobutanedisulfonyl fluoride
(**polymer solid electrolytes** having high ionic cond. and no internal resistance increase and secondary **batteries** using the same)

L38 ANSWER 10 OF 12 HCA COPYRIGHT 2003 ACS on STN
129:122975 Salts of perfluorinated sulfonamides or sulfinamides and their use as ionic conductors and as catalysts. Armand, Michel; Choquette, Yves; Gauthier, Michel; Michot, Christophe (Centre National de la Recherche Scientifique (CNRS), Fr.; Hydro-Quebec). Eur. Pat. Appl. EP 850920 A2 19980701, 65 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (French). CODEN: EPXXDW. APPLICATION: EP

sulfonium salt as conductor

1997-403187 19971230. PRIORITY: CA 1996-2194127 19961230; CA 1997-2199231 19970305.

AB The salts comprise a cation and R_1SO_xN-Z in amts. to balance the pos. and neg. charges, where R_1 is halo, perhaloalkyl (optionally interrupted by O, S, or NH) or -alkaryl, R_2CF_2 , $R_2CF_2CF_2$, $R_2CF_2CF(CF_3)$, or CF_3CFR_2 ; R_2 is an org. radical which is not perhalogenated; Z is an electron-withdrawing group, which may be the residue of a polymer or may be a polyvalent group attached to other $N-SO_xR_1$ moieties; and $x = 1$ or 2 . Thus, a mixt. of 40 mmol acrylonitrile and 60 mmol 4- $CH_2:CHC_6H_4SO_2N-SO_2CF_3$ Li^+ was copolymd. in 82% yield by use of 1,1'-azobis(cyclohexanecarbonitrile) in THF, and the copolymer was used at 20% concn. as a binder in both the carbon anode and the carbon- $LiNiO_2$ cathode of a **battery** contg. a **gelled electrolyte**.

IT 1070-89-9, Sodium bis(trimethylsilyl)amide
(salts of perfluorinated sulfonamides or sulfinamides for use as ionic conductors and as catalysts)

RN 1070-89-9 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, sodium salt (8CI, 9CI) (CA INDEX NAME)

$Me_3Si-NH-SiMe_3$

● Na

IC ICM C07C311-48

ICS C07C311-09; C07D307-64; C07D303-34; C07D407-04; C07D207-452; C07D213-76; C07D285-135; C07D251-70; C07D219-10; C07D311-82

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 52, 67, 76

IT Secondary **batteries**

(polymeric salts of perfluorinated sulfonamides or sulfinamides for use in)

IT 51-79-6, Ethyl carbamate 62-53-3, Benzenamine, reactions
74-89-5, Methylamine, reactions 78-08-0, Vinyltriethoxysilane
92-82-0, Phenazine 95-54-5, o-Phenylenediamine, reactions
96-24-2, 3-Chloro-1,2-propanediol 97-93-8, Triethylaluminum, reactions
98-16-8, 3-(Trifluoromethyl)aniline 98-61-3, 4-Iodobenzenesulfonyl chloride
102-54-5, Ferrocene 111-92-2, Dibutylamine
142-84-7, Dipropylamine 143-15-7, Dodecyl bromide
354-64-3, Pentafluoroethyl iodide 358-23-6, Trifluoromethanesulfonic anhydride
375-72-4, Perfluorobutane-1-sulfonyl fluoride
392-95-0, 2-Chloro-3,5-dinitrobenzotrifluoride
421-83-0, Trifluoromethanesulfonyl chloride 541-59-3, Maleimide
581-28-2, 2-Aminoacridine 605-65-2, 5-(Dimethylamino)-1-naphthalenesulfonyl chloride
700-16-3, Pentafluoropyridine 764-48-7, Ethylene glycol monovinyl ether
814-68-6, Acryloyl chloride 917-54-4, Methylolithium 920-66-1, 1,1,1,3,3,3-

Hexafluoro-2-propanol 1070-89-9, Sodium
 bis(trimethylsilyl)amide 1111-78-0, Ammonium carbamate
 1120-71-4, 1,3-Propane sultone 1120-99-6, 1,2,4-Triazin-3-amine
 1126-79-0, Butoxybenzene 1622-32-8, 2-Chloroethanesulfonyl
 chloride 1633-82-5, 3-Chloropropane-1-sulfonyl chloride
 1648-99-3, 2,2,2-Trifluoroethanesulfonyl chloride 2444-68-0,
 9-Vinylnanthracene 2495-39-8 2633-67-2, 4-Styrenesulfonyl
 chloride 3520-42-1, Sulforhodamine B 4286-55-9,
 6-Bromo-1-hexanol 4628-94-8, Dipotassium 1,3,4-thiadiazole-2,5-
 dithiolate 5130-24-5, Vinyl chloroformate 5231-87-8 6553-96-4,
 2,4,6-Triisopropylbenzenesulfonyl chloride 7673-09-8,
 Trichloromelamine 7795-95-1, 1-Octanesulfonyl chloride
 9036-19-5, Igepal CA 520 10444-89-0 10531-50-7,
 (R)-2,2,2-Trifluoro-1-phenylethanol 13036-75-4, Fluorosulfonic
 anhydride 13360-57-1, Dimethylsulfamoyl chloride 13781-67-4,
 3-Thiopheneethanol 20611-81-8, Disodium cyanamide 21797-13-7
 25322-68-3 27835-99-0 40724-67-2 82985-35-1,
 Bis[3-(trimethoxysilyl)propyl]amine 210226-82-7 210227-12-6,
 3-(1,1,2,2-Tetrafluoroethoxy)benzenesulfonyl chloride 210227-69-3
 (salts of perfluorinated sulfonamides or sulfinamides for use as
 ionic conductors and as catalysts)

L38 ANSWER (11) OF 12 HCA COPYRIGHT 2003 ACS on STN

127:307803 Polymers with high density of imido anion groups, their
 manufacture and uses in solid-state electrolytes and
batteries. Namikata, Hisashi; Ikeda, Masanori; Yamamoto,
 Fumihiko (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai
 Tokyo Koho JP 09263637 A2 19971007 Heisei, 9 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1996-331106 19961211. PRIORITY: JP
 1995-326999 19951215; JP 1996-11823 19960126.

AB The polymers are synthesized from fluorosulfonylacetyl fluoride
 derivs., and used at 10-100% in **polymer solid**
electrolytes for batteries. Mixing sulfuric
 anhydride with tetrafluoroethylene, and treating the resulting
 2-hydroxytetrafluoroethanesulfonic acid sultone with Et₃N at
 ice-chilled temp. gave fluorosulfonyldifluoroacetyl fluoride (I).
Polymg. the I with Li bis(trimethylsilyl)amide in THF gave polymer
having SO₂CF₂CONLi units, and a cast film from the polymer had ion
cond. 6×10^{-6} S/cm at 20 degree.

IT **197378-70-4P**, Fluorosulfonyldifluoroacetyl fluoride-Li
 bis(trimethylsilyl)amide copolymer
 (manuf. of fluorosulfonyldifluoroacetyl fluoride **polymers**
 for solid **electrolytes and batteries**)

RN 197378-70-4 HCA

CN Acetyl fluoride, difluoro(fluorosulfonyl)-, polymer with
 1,1,1-trimethyl-N-(trimethylsilyl)silanamine lithium salt (9CI) (CA
 INDEX NAME)

CM 1

CRN 4039-32-1

CMF C6 H19 N Si2 . Li

prop? similar
 to JP
 11-7968

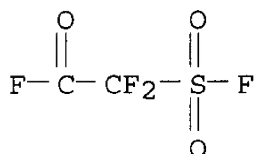


● Li

CM 2

CRN 677-67-8

CMF C2 F4 O3 S



- IC ICM C08G075-30
ICS C08J005-22; H01M006-18; H01M008-02; H01M010-40
- CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 52
- ST fluorosulfonyldifluoroacetyl fluoride polymer ionization;
polyelectrolyte fluorosulfonyldifluoroacetyl fluoride polymer;
secondary **battery** fluorosulfonyldifluoroacetyl fluoride
polymer; solid **electrolyte** fluorosulfonyldifluoroacetyl
fluoride **polymer**
- IT Fluoropolymers, uses
Polyoxyalkylenes, uses
(composite polyelectrolytes; with fluorosulfonyldifluoroacetyl
fluoride **polymers** for solid **electrolytes** and
batteries)
- IT Polysulfones, preparation
Polysulfones, preparation
(fluorine-contg.; polymers with high d. of imido anion groups,
their manuf. and uses in solid-state electrolytes and
batteries)
- IT **Electrolytes**
Secondary **batteries**
(**polymers** with high d. of imido anion groups, their
manuf. and uses in solid-state electrolytes and **batteries**
)
- IT Fluoropolymers, preparation
Fluoropolymers, preparation
(polysulfone-; polymers with high d. of imido anion groups, their
manuf. and uses in solid-state electrolytes and **batteries**
)
- IT Polyelectrolytes

- (solid; fluorosulfonyldifluoroacetyl fluoride polymers for **batteries**)
- IT 24937-79-9, Polyvinylidene fluoride 25322-68-3
(composite polyelectrolytes; with fluorosulfonyldifluoroacetyl fluoride **polymers** for solid **electrolytes** and **batteries**)
- IT 197378-70-4P, Fluorosulfonyldifluoroacetyl fluoride-Li bis(trimethylsilyl)amide copolymer
(manuf. of fluorosulfonyldifluoroacetyl fluoride **polymers** for solid **electrolytes** and **batteries**)
- IT 121-44-8, uses
(ring-opening catalyst; for sultone in manuf. of fluorosulfonyldifluoroacetyl fluoride **polymers** for solid **electrolytes** and **batteries**)
- L38 ANSWER 12 OF 12 HCA COPYRIGHT 2003 ACS on STN
124:294472 Study of the poly[oxyethylene oligo-(oxyethylene)]/lithium metal interface. Comparison of linear, **cross-linked**, and alkylated **electrolyte** films. Sloop, Steven E.; Lerner, Michael M. (Dep. Chem., Oregon State Univ., Corvallis, OR, 97330-4003, USA). Journal of the Electrochemical Society, 143(4), 1292-7 (English) 1996. CODEN: JESOAN. ISSN: 0013-4651. Publisher: Electrochemical Society.
- AB The formation and stabilities of interfaces between poly[oxyethylene oligo-(oxyethylene)] (PEM)-salt **polymer electrolytes** and lithium metal or LiCx are investigated. The Li/PEM25LiClO4 interface (where x in PEMxLiAn indicates the mole ratio of O/Li in the electrolyte) demonstrates behavior consistent with the formation of a solid electrolyte interface, with a stable interfacial resistance of 900 .OMEGA. cm2 at 50.degree.. UV-cross-linked films do not form a stable interface, Rint rapidly increases to greater than 105 .OMEGA. cm2. When cross-linked samples are treated with Me iodide, hexamethyldisilazane/trimethylchlorosilane or upon addn. of the plasticizer polyethylene glycol di-Me ether, Rint at 50.degree. stabilizes at approx. 2000 .OMEGA. cm2. The **polymer electrolytes** require a plasticizer to form a low impedance interface with LiCx.
- IT 999-97-3D, Hexamethyldisilazane, reaction product with oxyethylene-oxyethylene copolymer or polyoxyethylene, sodium complexes
(comparison of linear, **cross-linked**, and alkylated **electrolyte** films in relation to poly[oxyethylene oligo-(oxyethylene)]/lithium metal interface)
- RN 999-97-3 HCA
CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

Me3Si-NH-SiMe3

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

- ST oxymethylene oxyethylene **copolymer battery electrolyte**; lithium battery oxymethylene oxyethylene **copolymer electrolyte**
- IT **Batteries**, secondary
Battery electrolytes
Electric conductivity and conduction
(comparison of linear, **cross-linked**, and alkylated **electrolyte** films in relation to poly[oxymethylene oligo-(oxyethylene)]/lithium metal interface)
- IT 74-88-4D, Methyl iodide, reaction product with oxyethylene-oxymethylene copolymer or polyoxyethylene, sodium complexes
75-77-4D, Trimethylchlorosilane, reaction product with oxyethylene-oxymethylene copolymer or polyoxyethylene, sodium complexes
999-97-3D, Hexamethyldisilazane, reaction product with oxyethylene-oxymethylene copolymer or polyoxyethylene, sodium complexes
7439-93-2D, Lithium, complex with polyoxyethylene or oxyethylene-oxymethylene copolymer
25266-14-2D, Oxyethylene-oxymethylene copolymer, methylated or silylated, sodium complexes
25322-68-3D, methylated or silylated, sodium complexes
(comparison of linear, **cross-linked**, and alkylated **electrolyte** films in relation to poly[oxymethylene oligo-(oxyethylene)]/lithium metal interface)
- IT 24991-55-7, Polyethylene glycol dimethyl ether
(plasticizer; comparison of linear, **cross-linked**, and alkylated **electrolyte** films in relation to poly[oxymethylene oligo-(oxyethylene)]/lithium metal interface)

=> d 139 1-34 cbib abs hitstr nitind

(This last portion starts to get pretty junky.)

B, D.

L39 ANSWER (1 OF 34 HCA COPYRIGHT 2003 ACS on STN

139:268460 Preparation of solutions of amidomagnesium chlorides in poly(ethylene oxide) and their characterization by conductivity measurements. Liebenow, Cornelius; Mantey, Steffen (Institut fuer Chemie und Biochemie, Ernst Moritz Arndt Universitaet, Greifswald, 17487, Germany). Journal of Solid State Electrochemistry, 7(5), 313-316 (English) 2003. CODEN: JSSEFS. ISSN: 1432-8488.
Publisher: Springer-Verlag.

AB **Polymer electrolyte** systems were prepd. for the first time by dissoln. of amidomagnesium chlorides in poly(ethylene oxide), (PEO). For the prepn., solns. of (hexamethyldisilylamido)magnesium chloride, (dimethylpyrrolyl)magnesium chloride, (diisopropylamido)magnesium chloride, piperidinomagnesium chloride and morpholinomagnesium chloride were chosen. The compn. of these **polymer electrolyte** systems corresponds to the general formula $R_2NMgCl \cdot n P(EO)_n \cdot THF$. Most work has been done with the system (hexamethyldisilylamido)magnesium chloride in PEO, $(Me_3Si)_2NMgCl \cdot n P(EO)_n \cdot THF$, with $n = 3, 4, 5$, or 7 . The electrolytes have a soft rubber-like consistency. At $30^\circ C$, elec. conductivities of 10^{-6} to 10^{-5} S/cm were found. The

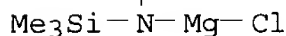
conductivities were measured in the temp. range 20-60 .degree.C. Within this temp. range a linear dependence of the logarithms of the cond. on the inverse temp. was found and activation energies for the conducting process of 30-60 kJ/mol were calcd. Using those **polymer electrolytes** with a high content of the amidomagnesium compd., a reversible magnesium deposition takes place by cathodic redn. at potentials below -1.9 V vs. a Ag/AgCl ref. electrode. These **polymer electrolytes** were found to be stable against oxidn. up to about -0.3 V vs. Ag/AgCl.

IT 303181-27-3P

(prepn. of solns. of amidomagnesium chlorides in poly(ethylene oxide))

RN 303181-27-3 HCA

CN Magnesium, chloro[1,1,1-trimethyl-N-(trimethylsilyl)silanaminato]-(9CI) (CA INDEX NAME)



CC 76-1 (Electric Phenomena)

Section cross-reference(s): 29, 38, 72

ST amidomagnesium chlorides polyethylene oxide **polymer electrolyte** elec cond

IT **Polymer electrolytes**

(prepn. of solns. of amidomagnesium chlorides in poly(ethylene oxide))

IT 126770-78-3P 303181-27-3P

(prepn. of solns. of amidomagnesium chlorides in poly(ethylene oxide))

L39 ANSWER 2 OF 34 HCA COPYRIGHT 2003 ACS on STN

B.D.

138:258834 Study of Phase Formation Processes in the Systems Li-N, Si₃N₄-Li₃N, Si₃N₄-Li₃N-Y₂O₃. Bartnitskaya, T. S.; Grigorev, O. N.; Kurshinskaya, L. A.; Rogozinskaya, A. A.; Klochkov, L. A.; Dubovik, T. V. (Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Kiev, 03142, Ukraine). Powder Metallurgy and Metal Ceramics (Translation of Poroshkovaya Metallurgiya (Kiev)), 41(7-8), 413-416 (English) 2002. CODEN: PMMCEF. ISSN: 1068-1302. Publisher: Kluwer Academic/Consultants Bureau.

AB We have studied phase formation processes in the systems Li-N and Si₃N₄-Li₃N. By nitriding lithium powder at 400-600.degree.C, we obtained lithium nitride Li₃N with a compn. approaching stoichiometric. In the system Si₃N₄-Li₃N at 300-1300.degree.C, the ternary compds. Li₈Si₄N₄ (500.degree.C), Li₅Si₃N₃, Li₂Si₂N₂ (900.degree.C), and LiSi₂N₃ (1300.degree.C) are formed. The studied properties of the hot-pressed composite material of the system Si₃N₄-Li₃N-Y₂O₃ allow us to provisionally assign it to the class of solid **electrolytes**.

IT 12521-45-8, Lithium silicon nitride LiSi₂N₃

12521-66-3, Lithium silicon nitride Li₈Si₄N₄

67181-65-1, Lithium silicon nitride Li_5SiN_3
 (equil. phase; phase formation processes in the Li-N, Si_3N_4 - Li_3N
 and Si_3N_4 - Li_3N - Y_2O_3 systems)

RN 12521-45-8 HCA

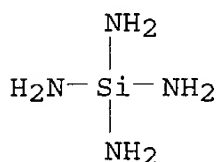
CN Silanamine, 1-nitrilo-N-(nitrilosilyl)-, monolithium salt (9CI) (CA
 INDEX NAME)



● Li

RN 12521-66-3 HCA

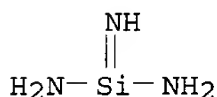
CN Silanetetramine, octalithium salt (9CI) (CA INDEX NAME)



●8 Li

RN 67181-65-1 HCA

CN Silanediimine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



●5 Li

CC 57-2 (Ceramics)

Section cross-reference(s): 52, 76

IT Solid **electrolytes**

(lithium silicon yttrium nitride oxide; phase formation processes
 in the Li-N, Si_3N_4 - Li_3N and Si_3N_4 - Li_3N - Y_2O_3 systems)

IT 12521-45-8, Lithium silicon nitride LiSi_2N_3 12521-55-0,

Lithium silicon nitride Li_2SiN_2 12521-66-3, Lithium
 silicon nitride Li_8SiN_4 67181-65-1, Lithium silicon
 nitride Li_5SiN_3

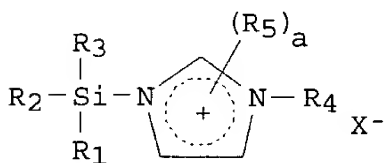
(equil. phase; phase formation processes in the Li-N, Si_3N_4 - Li_3N

and Si₃N₄-Li₃N-Y₂O₃ systems)

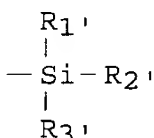
IT 296231-50-0, Lithium nitrogen silicon yttrium oxide 502989-48-2,
Lithium silicon yttrium nitride oxide (Li_{0.6}Si_{2.33}Y_{0.04}N_{3.31}O_{0.07})
502989-49-3, Lithium silicon yttrium nitride oxide
(Li_{1.06}Si_{1.82}Y_{0.08}N_{2.78}O_{0.12})
(solid **electrolytes**; phase formation processes in the
Li-N, Si₃N₄-Li₃N and Si₃N₄-Li₃N-Y₂O₃ systems)

L39 ANSWER (3) OF 34 HCA COPYRIGHT 2003 ACS on STN B.D.
137:235208 **Electrolyte** for nonaqueous **electrolyte**
solution. Nagakura, Naoto; Kawahara, Takeo (Tokuyama Corp., Japan).
Jpn. Kokai Tokkyo Koho JP 2002260729 A2 20020913, 9 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-57976 20010302.

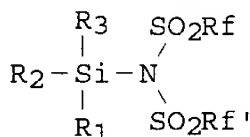
GI



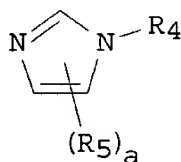
I



II



III



IV

AB The **electrolyte** is a substituted (1-trialkylsilyl)imidazolium salt, I, where R₁-3 and R₅ = C₁-10 alkyl, C₃-8 cycloalkyl, C₂-10 alkenyl, or C₂-10 alkynyl groups; R₄ = C₁-10 alkyl, C₃-8 cycloalkyl, C₂-10 alkenyl, C₂-10 alkynyl groups or II, R'₁-R'₃ = C₁-10 alkyl, C₃-8 cycloalkyl, C₂-10 alkenyl, or C₂-10 alkynyl groups; a = 0-3 integer (when a = 2 or 3, the R₅'s may be different from each other), and X = a monovalent anion, preferably (SO₂Rf)(N)-(SO₂R'f) (Rf and R'f = C₁-9 perfluoroalkyl group). Another type of the **electrolyte** is a mixt. of trialkylsilyl perfluoroalkylsulfonimide III and imidazole deriv. IV. The **electrolyte** is useful for nonaq. **electrolyte** soln. in secondary Li battery for improved safety.

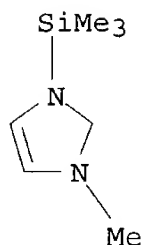
IT 459174-70-0 459174-79-9 459174-87-9
459174-93-7 459175-01-0 459175-08-7
459175-15-6 459175-21-4 459175-28-1
459409-18-8, 1-Trimethylsilyl-3-methylimidazolium
tetrachloroaluminate

(comps. of substituted imidazolium salts for
electrolytes in secondary lithium **batteries** for
 safety)

RN 459174-70-0 HCA
 CN 1H-Imidazolium, 1-methyl-3-(trimethylsilyl)-, salt with
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
 (1:1) (9CI) (CA INDEX NAME)

CM 1

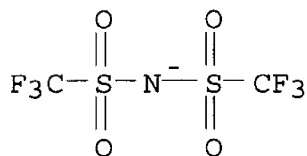
CRN 101300-50-9
 CMF C7 H15 N2 Si



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

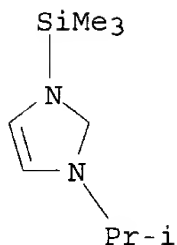
CRN 98837-98-0
 CMF C2 F6 N O4 S2



RN 459174-79-9 HCA
 CN 1H-Imidazolium, 1-(1-methylethyl)-3-(trimethylsilyl)-, salt with
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 459174-78-8
 CMF C9 H19 N2 Si

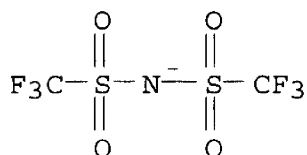


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



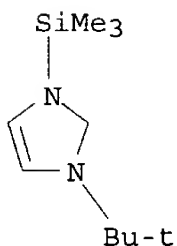
RN 459174-87-9 HCA

CN 1H-Imidazolium, 1-(1,1-dimethylethyl)-3-(trimethylsilyl)-, salt with
1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 459174-86-8

CMF C10 H21 N2 Si

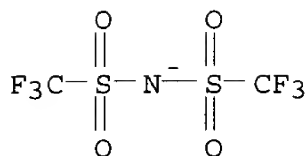


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

CRN 98837-98-0

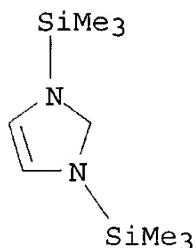
CMF C2 F6 N O4 S2



RN 459174-93-7 HCA
 CN 1H-Imidazolium, 1,3-bis(trimethylsilyl)-, salt with
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
 (1:1) (9CI) (CA INDEX NAME)

CM 1

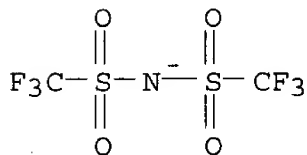
CRN 101300-54-3
 CMF C9 H21 N2 Si2



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

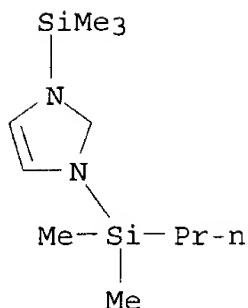
CRN 98837-98-0
 CMF C2 F6 N O4 S2



RN 459175-01-0 HCA
 CN 1H-Imidazolium, 1-(dimethylpropylsilyl)-3-(trimethylsilyl)-, salt
 with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 459175-00-9
 CMF C11 H25 N2 Si2

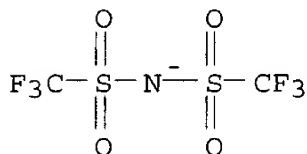


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



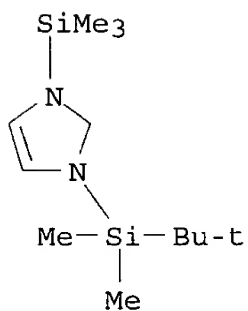
RN 459175-08-7 HCA

CN 1H-Imidazolium, 1-[(1,1-dimethylethyl)dimethylsilyl]-3-(trimethylsilyl)-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 459175-07-6

CMF C12 H27 N2 Si2

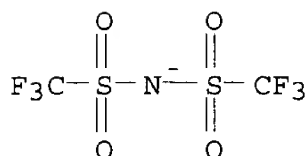


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



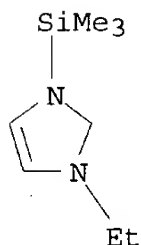
RN 459175-15-6 HCA

CN 1H-Imidazolium, 1-ethyl-3-(trimethylsilyl)-, salt with
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 459175-14-5

CMF C8 H17 N2 Si

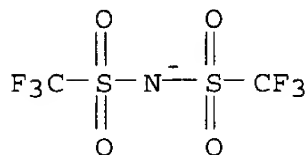


*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2

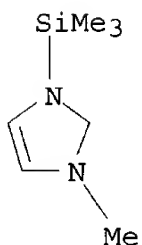


RN 459175-21-4 HCA

CN 1H-Imidazolium, 1-methyl-3-(trimethylsilyl)-, tetrafluoroborate(1-)
 (9CI) (CA INDEX NAME)

CM 1

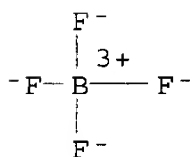
CRN 101300-50-9
CMF C7 H15 N2 Si



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

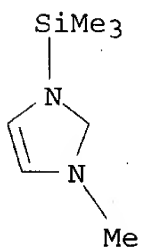
CRN 14874-70-5
CMF B F4
CCI CCS



RN 459175-28-1 HCA
CN 1H-Imidazolium, 1-methyl-3-(trimethylsilyl)-, hexafluorophosphate(1-)
(9CI) (CA INDEX NAME)

CM 1

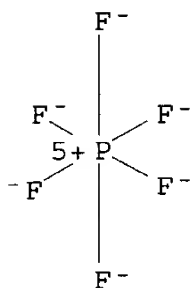
CRN 101300-50-9
CMF C7 H15 N2 Si



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

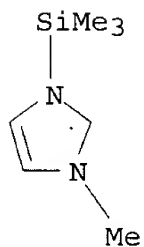
CRN 16919-18-9
 CMF F6 P
 CCI CCS



RN 459409-18-8 HCA
 CN 1H-Imidazolium, 1-methyl-3-(trimethylsilyl)-, (T-4)-
 tetrachloroaluminate(1-) (9CI) (CA INDEX NAME)

CM 1

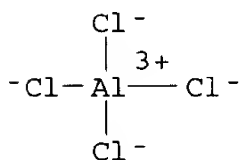
CRN 101300-50-9
 CMF C7 H15 N2 Si



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

CM 2

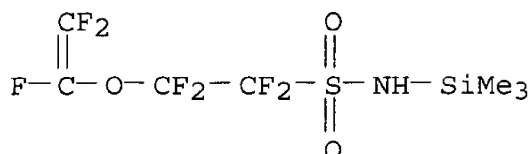
CRN 17611-22-2
 CMF Al Cl4
 CCI CCS



IC ICM H01M010-40

- ICS C07F007-10
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST safety secondary lithium **battery electrolyte**
 imidazole deriv; trialkylsilylimidazolium compd secondary lithium
battery electrolyte safety
 IT **Battery electrolytes**
 Safety
 (compns. of substituted imidazolium salts for
electrolytes in secondary lithium **batteries** for
 safety)
 IT 459174-70-0 459174-79-9 459174-87-9
 459174-93-7 459175-01-0 459175-08-7
 459175-15-6 459175-21-4 459175-28-1
 459409-18-8, 1-Trimethylsilyl-3-methylimidazolium
 tetrachloroaluminate
 (compns. of substituted imidazolium salts for
electrolytes in secondary lithium **batteries** for
 safety)
- B, D,
- L39 ANSWER (4) OF 34 HCA COPYRIGHT 2003 ACS on STN
 137:169968 Manufacture of perfluorovinyl ether monomer having
 sulfonamide group and its use for solid **electrolyte**
 membrane. Ikeda, Masanori; Hoshi, Nobuto; Uematsu, Nobuyuki; Koga,
 Takehiro (Asahi Kasei Kabushiki Kaisha, Japan). PCT Int. Appl. WO
 2002062749 A1 20020815, 215 pp. DESIGNATED STATES: W: AE, AG, AL,
 AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ,
 DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
 IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
 SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG,
 CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML,
 MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.
 APPLICATION: WO 2002-JP854 20020201. PRIORITY: JP 2001-25018
 20010201; JP 2001-30955 20010207; JP 2001-278418 20010913; JP
 2001-342172 20011107; JP 2001-343780 20011108; JP 2001-343931
 20011108.
- AB A perfluorovinyl ether monomer represented by
 $\text{CF}_2\text{CF}(\text{OCF}_2\text{CFCF}_3)_m\text{O}(\text{CF}_2)_n\text{SO}_2\text{NR}_1\text{R}_2$ (wherein m = 0-5 integer; n = 1-5
 integer; R₁, R₂ = H, C₁-10 (un)substituted hydrocarbyl, substituted
 silyl; R₁ and R₂ may be bonded to each other to form a ring) and its
 polymers are prep'd. and the polymer films are used as solid
electrolyte membrane. Neutralization of
 $\text{CF}_3\text{CF}(\text{COF})\text{OCF}_2\text{CF}_2\text{SO}_3\text{F}$ with Na_2CO_3 , amidation with diethylamine and
 n-BuLi, and decarboxylation gave $\text{CF}_2\text{:CFOCF}_2\text{CF}_2\text{SO}_3\text{NEt}_2$. Copolymn. of
 this monomer with tetrafluoroethylene and press molding at
 250.degree. gave a membrane useful for solid **electrolyte**.
- IT 446312-60-3P
 (manuf. of perfluorovinyl ether monomer having sulfonamide group
 for prepn. of solid **electrolyte** membrane)
- RN 446312-60-3 HCA
 CN Ethanesulfonamide, 1,1,2,2-tetrafluoro-2-[(trifluoroethenyl)oxy]-N-

(trimethylsilyl) - (9CI) (CA INDEX NAME)

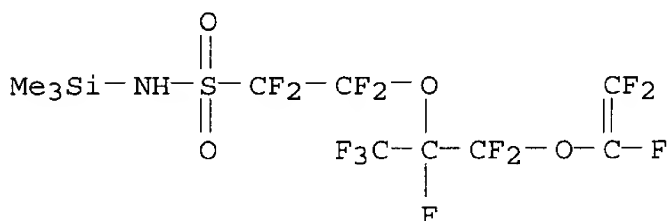


IT 446312-72-7P

(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

RN 446312-72-7 HCA

CN Ethanesulfonamide, 2-[1-[difluoro[(trifluoroethenyl)oxy]methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro-N-(trimethylsilyl)-(9CI) (CA INDEX NAME)



IC ICM C07C311-24

ICS C07C303-36; C07F007-12; C08F214-26; C08F216-14; H01M008-02

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 38, 52

ST perfluorovinyl ether monomer sulfonamide group; solid **electrolyte** perfluorovinyl ether tetrafluoroethylene copolymer membrane

IT Ethers, preparation

(fluoroalkyl; manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)IT Solid **electrolytes**(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

IT Monomers

(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

IT Fluoropolymers, preparation

(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

IT Amines, reactions

(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

IT 446312-50-1P 446312-60-3P

(manuf. of perfluorovinyl ether monomer having sulfonamide group for prepn. of solid **electrolyte** membrane)

IT 75549-02-9P 75718-06-8P 78010-39-6P 144728-59-6P
445293-56-1P 445293-57-2P 445293-58-3P 445293-59-4P
445293-60-7P 445293-61-8P 446312-49-8P 446312-51-2P
446312-52-3P 446312-53-4P 446312-54-5P 446312-55-6P
446312-56-7P 446312-57-8P 446312-58-9P 446312-59-0P
446312-61-4P 446312-62-5P 446312-63-6P 446312-65-8P
446312-68-1P 446312-69-2P 446312-70-5P 446312-71-6P
446312-72-7P 446312-75-0P
(manuf. of perfluorovinyl ether monomer having sulfonamide group
for prepn. of solid **electrolyte** membrane)

IT 445293-62-9P 446312-64-7P 446312-66-9P 446312-67-0DP,
bis(sulfonimide) derivs. 446312-67-0P 446312-73-8P
446312-74-9P
(manuf. of perfluorovinyl ether monomer having sulfonamide group
for prepn. of solid **electrolyte** membrane)

IT 62-53-3, Aniline, reactions 75-64-9, tert-Butylamine, reactions
109-89-7, Diethylamine, reactions 109-97-7, Pyrrole 124-40-3,
Dimethylamine, reactions 288-32-4, Imidazole, reactions
999-97-3, Hexamethyldisilazane 1070-89-9, Sodium
hexamethyldisilazide 4089-57-0 4089-58-1 29514-94-1
77545-08-5
(manuf. of perfluorovinyl ether monomer having sulfonamide group
for prepn. of solid **electrolyte** membrane)

L39 ANSWER 5 OF 34 HCA COPYRIGHT 2003 ACS on STN B D
137:148867 Nonaqueous **electrolyte** solutions for capacitors.
Watanuki, Yusuke; Nakano, Minoru; Suzuki, Emi; Uramoto, Masahide
(Toyama Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho
JP 2002222740 A2 20020809, 4 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP ~~2001-16947~~ 20010125.

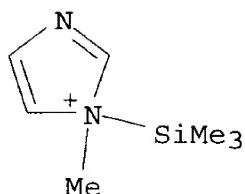
AB The title **electrolyte** solns. contain alkylsilylated
imidazolium salts which give the solns. high withstand voltage and
prevention of decompn. and consequent deterioration of discharge
characteristics at high voltage.

IT **445042-87-5**
(**electrolyte**; nonaq. **electrolyte** solns. for
capacitors)

RN 445042-87-5 HCA
CN 1H-Imidazolium, 1-methyl-1-(trimethylsilyl)-, tetrafluoroborate(1-)
(9CI) (CA INDEX NAME)

CM 1

CRN 445042-86-4
CMF C7 H15 N2 Si

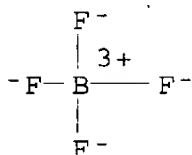


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IC ICM H01G009-038
ICS H01G009-035; H01M010-40
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 27, 72
ST imidazolium salt alkylsilylation nonaq **electrolyte** soln
capacitor; alkylsilylimidazolium salt nonaq **electrolyte**
soln capacitor
IT **Electrolytes**
(alkylsilylated imidazolium salts; nonaq. **electrolyte**
solns. for capacitors)
IT Onium compounds
(imidazolium compds., alkylsilylated, salts, for
electrolytes; nonaq. **electrolyte** solns. for
capacitors)
IT **Electrolytic capacitors**
(nonaq. **electrolyte** solns. for capacitors)
IT 445042-87-5
(**electrolyte**; nonaq. **electrolyte** solns. for
capacitors)

BD

L39 ANSWER (6) OF 34 HCA COPYRIGHT 2003 ACS on STN

136:248264 Synthesis, Characterization, and Ion-Conductive Behavior in
an Organic Solvent and in a Polyether of a Novel Lithium Salt of a
Perfluorinated Polyimide Anion. Tokuda, Hiroyuki; Muto, Shunsuke;
Hoshi, Nobuto; Minakata, Takashi; Ikeda, Masanori; Yamamoto,
Fumihiko; Watanabe, Masayoshi (Department of Chemistry and
Biotechnology, Yokohama National University, Hodogaya-ku, Yokohama,

240-8501, Japan). Macromolecules, 35(4), 1403-1411 (English) 2002.
CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB To achieve highly conductive **polymer electrolytes** with a controllable ionic transference no., a novel polymeric lithium salt was synthesized and characterized. The novel lithium salt of a perfluorinated polyimide anion, poly(5-oxo-3-oxy-4-trifluoromethyl-1,2,4-pentafluoropentylene sulfonylimide lithium) (LiPPI), has a polyanionic backbone with a repeating unit resembling highly dissociable, thermally and electrochem. stable imide salts, such as lithium bis(trifluoromethylsulfonyl)imide (LiTFSI). The ion-conductive behavior of LiPPI in an org. solvent and in a polyether was extensively studied by using pulse-gradient spin-echo NMR, in addn. to differential scanning calorimetry, complex impedance measurement, and dynamic mech. anal. Solns. of LiPPI in ethylene carbonate (EC) exhibited a high degree of dissocn. and high ionic cond., and the self-diffusion coeff. of the anion was lower than that of the cation. Solvent-free **polymer electrolytes** were prepd. by dissolving LiPPI in a matrix polyether to afford a compatible polymer alloy, and the ionic cond. of the new **polymer alloy electrolytes** reached ca. 10^{-5} S cm⁻¹ at 30 .degree.C. Although the lithium ionic transference no. in the org. electrolyte soln. was approx. the same as that of LiTFSI in EC, the **polymer alloy electrolyte** gave an apparent transference no. higher than 0.7, which was considerably higher than that of LiTFSI in the same polyether.

IT 404018-32-2DP, ion-exchanged, Li salt
(synthesis, characterization, and ion-conductive behavior in an org. solvent and in a polyether of a novel Li salt of a perfluorinated polyimide anion)

RN 404018-32-2 HCA

CN Propanoyl fluoride, 2,3,3,3-tetrafluoro-2-[1,1,2,2-tetrafluoro-2-(fluorosulfonyl)ethoxy]-, polymer with 1,1,1-trimethyl-N-(trimethylsilyl)silamine potassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 40949-94-8

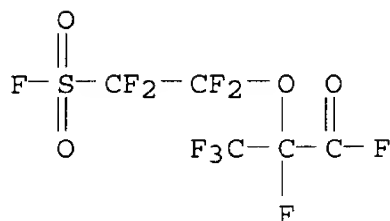
CMF C6 H19 N Si2 . K

Me₃Si-NH-SiMe₃

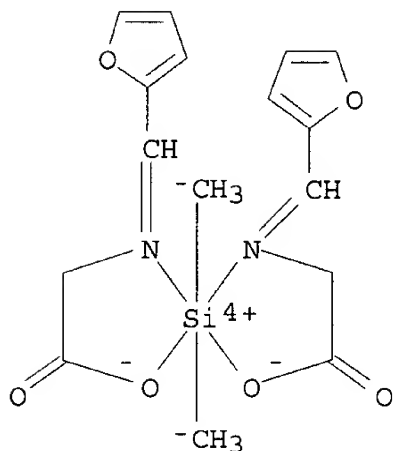
● K

CM 2

CRN 4089-57-0
CMF C5 F10 O4 S

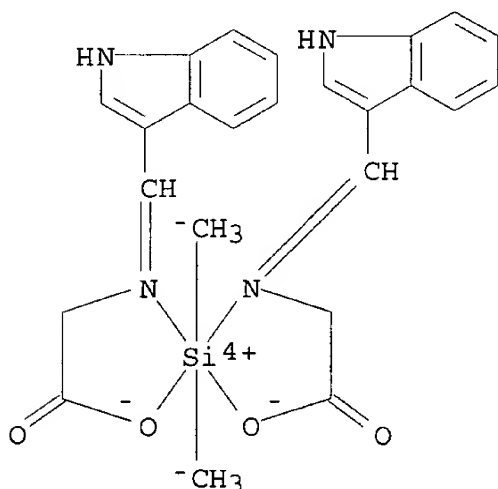


- CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 72
- IT Glass transition temperature
Ionic conductivity
Polymer electrolytes
Tensile strength
Thermal stability
Viscoelasticity
(synthesis, characterization, and ion-conductive behavior in an org. solvent and in a polyether of a novel Li salt of a perfluorinated polyimide anion)
- IT 404018-32-2DP, ion-exchanged, Li salt
(synthesis, characterization, and ion-conductive behavior in an org. solvent and in a polyether of a novel Li salt of a perfluorinated polyimide anion)
- L39 ANSWER ⑦ OF 34 HCA COPYRIGHT 2003 ACS on STN B D
136:118500 Coordination behavior of biologically active schiff bases of amino acids towards silicon(IV) ion. Sharma, M.; Khungar, B.; Varshney, S.; Singh, H. L.; Tripaathi, U. D.; Varshney, A. K. (Department of Chemistry, University of Rajasthan, Jaipur, 302004, India). Phosphorus, Sulfur and Silicon and the Related Elements, 174, 239-246 (English) 2001. CODEN: PSSLEC. ISSN: 1042-6507. OTHER SOURCES: CASREACT 136:118500. Publisher: Gordon & Breach Science Publishers.
- AB Reactions of diethoxydimethylsilane with Schiff bases derived from the condensation of furfuraldehyde, indole-3-carbaldehyde with alanine, glycine, valine, isoleucine and tryptophan in a 1:2 molar ratio give a new series of Me₂Si(N.intrsec.O)₂ type of organosilicon (IV) complexes. The complexes are monomeric and non-electrolytic in nature. The coordination behavior of Schiff bases through organosilicon (IV) has been investigated by IR, ¹H, ¹³C & ²⁹Si NMR spectral studies. Schiff bases and their silicon complexes have also been screened for their antifungal activity. Several of these complexes were quite active in this respect.
- IT 389827-83-2P 389827-87-6P 389827-91-2P
389827-94-5P 389827-98-9P 389828-02-8P
389828-06-2P 389828-09-5P 391663-18-6P
391663-19-7P
(prepn. and antifungal activity of)



RN 391663-19-7 HCA

CN Silicon, bis[N-(1H-indol-3-ylmethylene)glycinato-
.kappa.N,.kappa.O]dimethyl- (9CI) (CA INDEX NAME)



CC 29-6 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 10, 34

IT 389827-83-2P 389827-87-6P 389827-91-2P

389827-94-5P 389827-98-9P 389828-02-8P

389828-06-2P 389828-09-5P 391663-18-6P

391663-19-7P

(prepn. and antifungal activity of)

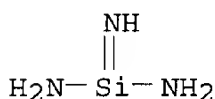
β D

L39 ANSWER (8) OF 34 HCA COPYRIGHT 2003 ACS on STN

135:364860 Influence of the ⁶Li-⁷Li isotope effect on lithium cation transport in Li₅SiN₃. Bogomolov, M. Yu.; Obrosof, V. P.; Batalov, N. N.; Arkhipov, G. G.; Martem'yanova, Z. S.; Stepanov, A. P. (Inst.

Vysokotemp. Elektrokhim., UO RAN, Yekaterinburg, Russia). Doklady Akademii Nauk, 378(6), 790-793 (Russian) 2001. CODEN: DAKNEQ. ISSN: 0869-5652. Publisher: MAIK Nauka.

- AB Non-monotonous dependences of elec. cond. and activation energy on the 6Li/7Li isotope ratio were obsd. exptl. for Li5SiN3. The concn. dependences of of cond. and activation energy exhibited min. and max., resp., near the 6Li/7Li compn. equal to 40-60%. The results manifest the existence of correlation in the movement of 6Li and 7Li ions due to different frequencies of the ion-vacancy exchange.
- IT 67181-65-1, Lithium silicon nitride Li5SiN3
(influence of the 6Li-7Li isotope effect on lithium cation transport in Li5SiN3)
- RN 67181-65-1 HCA
- CN Silanediimine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



● 5 Li

- CC 76-1 (Electric Phenomena)
- IT Ionic conductivity
Isotope effect
Solid **electrolytes**
(influence of the 6Li-7Li isotope effect on lithium cation transport in Li5SiN3)
- IT 13982-05-3, Lithium-7, properties 14258-72-1, Lithium-6, properties 67181-65-1, Lithium silicon nitride Li5SiN3
(influence of the 6Li-7Li isotope effect on lithium cation transport in Li5SiN3)
- L39 ANSWER 9 OF 34 HCA COPYRIGHT 2003 ACS on STN NO
134:367368 Dinuclear complexes and polymerization catalysts therefrom. Graf, David D.; Klosin, Jerzy; Nickias, Peter N.; Patton, Jason T. (Dow Chemical Co., USA). U.S. US 6235917 B1 20010522, 15 pp., Cont.-in-part of U.S. 6,153,776. (English). CODEN: USXXAM. APPLICATION: US 1999-234192 19990120. PRIORITY: US 1998-141659 19980828.
- AB Group 3-6 or Lanthanide metal complexes possessing two metal centers joined by means of a divalent bridging group joining trivalent moieties comprising boron or a member of Group 14 of the Periodic Table of the Elements, and optionally also comprising nitrogen, phosphorus, sulfur or oxygen, in the complexes, catalysts derived therefrom by combining the same with strong Lewis acids, Bronsted acid salts, salts contg. a cationic oxidizing agent or subjected to bulk **electrolysis** in the presence of compatible, inert non-coordinating anions and the use of such catalysts for polymg.

olefins, diolefins and/or acetylenically unsatd. monomers are disclosed. Ethylene and 1-octene were copolymd. using (μ -((1,1'-(1,6-Hexanediyl)bis(N-(1,1-dimethylethyl)-1-methyl-1-((1,2,3,4,5- η)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl)silanaminato- κ N)(4-)))tetrakis(phenylmethyl)di-titanium catalyst.

IT 239805-63-1P 239805-64-2P 239805-68-6P

239805-69-7P 340699-02-7P

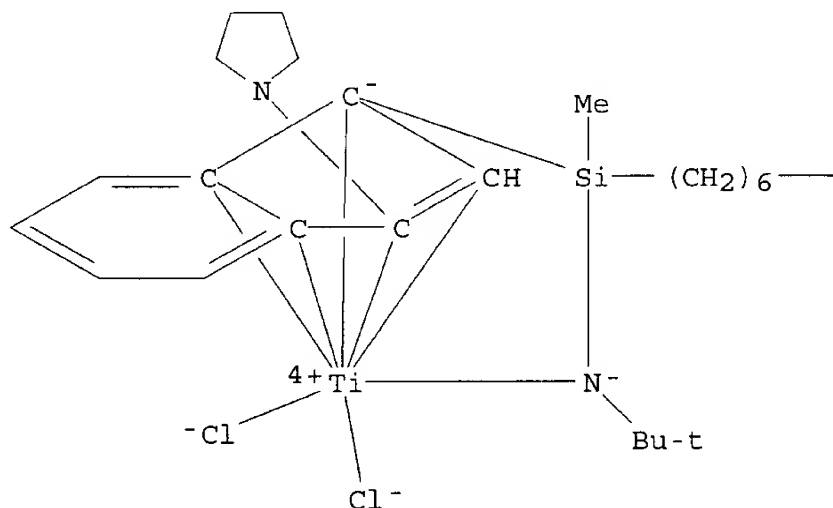
(dinuclear complexes and polymn. catalysts therefrom)

RN 239805-63-1 HCA

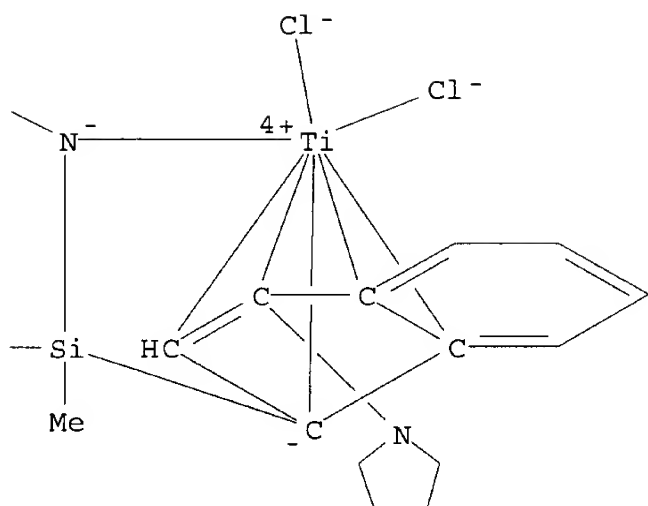
CN Titanium, tetrachloro[(μ -[[η :5: η :5-1,1'-(1,6-hexanediyl)bis[N-(1,1-dimethylethyl)-1-methyl-1-[3-(1-pyrrolidinyl)-1H-inden-1-yl]silanaminato- κ N]](4-))]di- (9CI) (CA INDEX NAME)

PAGE 1-A

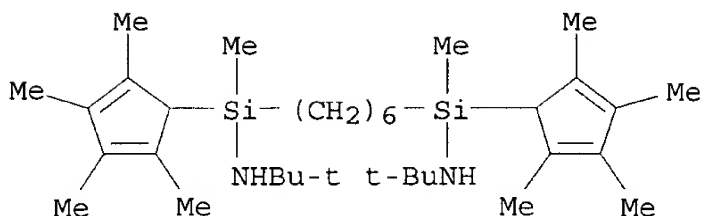
t-Bu



PAGE 1-B



RN 239805-64-2 HCA
 CN Titanium, [.mu.-[.eta.5:.eta.5-1,1'-(1,6-hexanediyl)bis[N-(1,1-dimethylethyl)-1-methyl-1-[3-(1-pyrrolidinyl)-1H-inden-1-yl]silanaminato-.kappa.N]](4-)]tetramethyldi- (9CI) (CA INDEX NAME)



IC ICM C07F017-00
ICS C07F007-00; B01J031-00
NCL 556011000
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 67
IT 239805-63-1P 239805-64-2P 239805-68-6P
239805-69-7P 340699-02-7P
(dinuclear complexes and polymn. catalysts therefrom)
IT 239805-60-8P 239805-61-9P 239805-62-0P
239805-65-3P 239805-66-4P 239805-67-5P
254995-57-8P 340699-04-9P
(dinuclear complexes and polymn. catalysts therefrom)

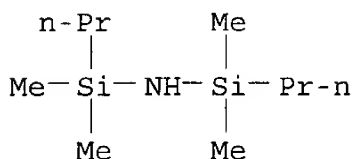
L39 ANSWER (10) OF 34 HCA COPYRIGHT 2003 ACS on STN NO
133:289027 Volatile liquid precursors for the chemical vapor deposition (CVD) of thin films containing alkali metals. Broomhall-Dillard, Randy N. R.; Gordon, Roy G.; Wagner, Valerie A. (Harvard University Chemical Laboratories, Cambridge, MA, 02138, USA). Materials Research Society Symposium Proceedings, 606 (Chemical Processing of Dielectrics, Insulators and Electronic Ceramics), 139-145 (English) 2000. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.

AB The 1st volatile, liq. compds. of alkali metals were synthesized and used for the CVD of materials contg. alkali metals. Amides MNR1 (SiMe2R2) and MN(SiMe2R2)2 [M = Li, Na, K; R1 = t-Bu, t-amyl; R2 = Et, Pr, i-Pr, Bu, i-Bu, n-hexyl, n-octyl] were made and characterized. The Li amides were prepd. via the deprotonation of the parent amine using Bu Li. The Na and K amides were formed by transamination of Na amide and K bis(trimethylsilyl)amide with the parent amines. For example, Li bis(ethyldimethylsilyl)amide was prepd. from Bu Li and bis(ethyldimethylsilyl)amine and was distd. as a clear, colorless liq. at 122.degree. (0.2 torr) having a viscosity of 37 cP at 40.degree.. These alkali metal amides can be used as convenient liq. sources for CVD of mixed metal oxides contg. alkali metals, such as the nonlinear optical material Li niobate, Li-contg. materials for battery electrodes, electrochromic W bronzes, and the pyroelec. and ferroelec. material K tantalate.
IT 253161-19-2P 253161-20-5P 300585-50-6P
300585-51-7P 300585-52-8P 300585-53-9P
300585-54-0P 300585-55-1P

(prepn. and use as oligomeric volatile liq. precursors for CVD of mixed metal oxide thin films contg. alkali metals)

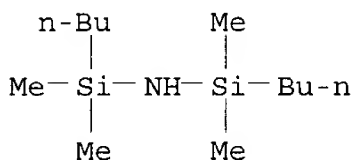
but relevant
structures

RN 253161-19-2 HCA
 CN Silanamine, N-(dimethylpropylsilyl)-1,1-dimethyl-1-propyl-, lithium salt (9CI) (CA INDEX NAME)



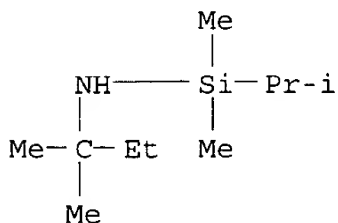
● Li

RN 253161-20-5 HCA
 CN Silanamine, 1-butyl-N-(butyldimethylsilyl)-1,1-dimethyl-, lithium salt (9CI) (CA INDEX NAME)



● Li

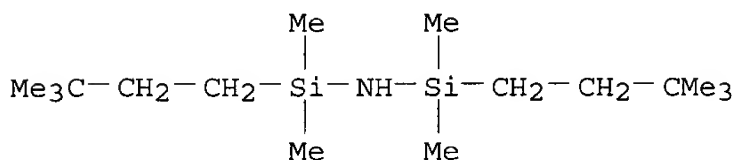
RN 300585-50-6 HCA
 CN Silanamine, N-(1,1-dimethylpropyl)-1,1-dimethyl-1-(1-methylethyl)-, lithium salt (9CI) (CA INDEX NAME)



● Li

RN 300585-51-7 HCA
 CN Silanamine, 1-(3,3-dimethylbutyl)-N-[(3,3-

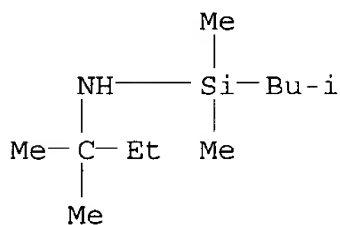
dimethylbutyl)dimethylsilyl]-1,1-dimethyl-, lithium salt (9CI) (CA INDEX NAME)



● Li

RN 300585-52-8 HCA

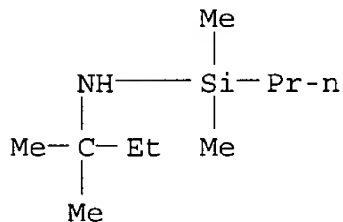
CN Silanamine, N-(1,1-dimethylpropyl)-1,1-dimethyl-1-(2-methylpropyl)-, lithium salt (9CI) (CA INDEX NAME)



● Li

RN 300585-53-9 HCA

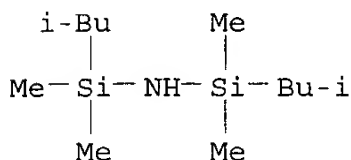
CN Silanamine, N-(1,1-dimethylpropyl)-1,1-dimethyl-1-propyl-, lithium salt (9CI) (CA INDEX NAME)



● Li

RN 300585-54-0 HCA

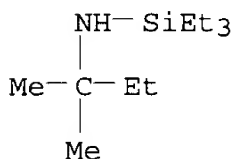
CN Silanamine, N-[dimethyl(2-methylpropyl)silyl]-1,1-dimethyl-1-(2-methylpropyl)-, lithium salt (9CI) (CA INDEX NAME)



● Li

RN 300585-55-1 HCA

CN Silanamine, N-(1,1-dimethylpropyl)-1,1,1-triethyl-, lithium salt (9CI) (CA INDEX NAME)



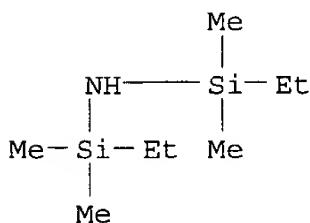
● Li

IT 300585-49-3P

(prepn. and use as volatile liq. precursors for CVD of mixed metal oxide thin films contg. alkali metals)

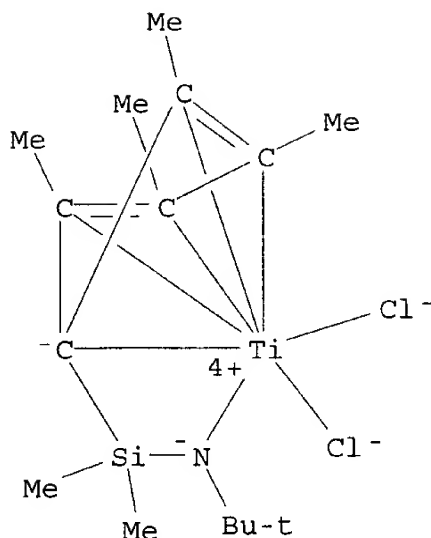
RN 300585-49-3 HCA

CN Silanamine, 1-ethyl-N-(ethyldimethylsilyl)-1,1-dimethyl-, lithium salt (9CI) (CA INDEX NAME)



● Li

- CC 75-1 (Crystallography and Liquid Crystals)
- IT 253161-19-2P 253161-20-5P 300585-50-6P
 300585-51-7P 300585-52-8P 300585-53-9P
 300585-54-0P 300585-55-1P 300585-56-2P
 300585-57-3P 300585-58-4P 300585-59-5P 300585-60-8P
 300585-61-9P 300585-62-0P
 (prepn. and use as oligomeric volatile liq. precursors for CVD of mixed metal oxide thin films contg. alkali metals)
- IT 300585-49-3P 300585-63-1P
 (prepn. and use as volatile liq. precursors for CVD of mixed metal oxide thin films contg. alkali metals)
- L39 ANSWER (11) OF 34 HCA COPYRIGHT 2003 ACS on STN ~
 133:223606 Antistatic resin compositions and their articles. Nishitoba, Yukiko; Oda, Takeshi; Arai, Akira (Denki Kagaku Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000248135 A2 20000912, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-56921 19990304.
- AB The compns., for films, sheets, or moldings, contain 100 parts resins contg. .gtoreq.5% 1-99:1-99 (by mol) arom. vinyl compd.-.alpha.-olefin random copolymers, 0.01-20 parts antistatic agents, 0.01-5 parts alkylenebis(satd. higher fatty acid amides), and optionally 0.01-10 parts (in)org. **electrolytes**. Thus, 100 parts isotactic 95:5 (mol%) ethylene-styrene random copolymer prepd. with (iso-Bu)₃Al, Me alumoxane, and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride (prepn. given) was kneaded with Torlon 4275 (polyamide-polyimide elastomer) 1.0, MB 400 (stearic acid monoglyceride) 0.05, SE 165 (stearyldiethanolamine) 0.05, Slipacks E [ethylenebis(stearamide)] 0.1, and Na dodecylbenzenesulfonate 0.1 part and extruded into a blown film showing surface resistivity 2 .times. 10¹¹ .OMEGA. and good antiblocking properties.
- IT 135072-61-6, (tert-Butylamido)dimethyl(tetramethyl-.eta.5-cyclopentadienyl)silane titanium dichloride
 (metallocene-catalyzed ethylene-styrene random copolymer compns. contg. antistatic agents and alkylenebis(fatty amides))
- RN 135072-61-6 HCA
- CN Titanium, dichloro[N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-.eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N]- (9CI) (CA INDEX NAME)

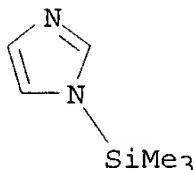


- IC ICM C08L025-08
ICS C08F004-642; C08F210-00; C08F212-00; C08J005-18; C08K005-20
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 29, 35, 38, 67
IT **Electrolytes**
(in metallocene-catalyzed ethylene-styrene random copolymer compns. contg. antistatic agents and alkylenebis(fatty amides))
IT 25155-30-0, Sodium dodecylbenzenesulfonate
(**electrolyte**; in metallocene-catalyzed ethylene-styrene random copolymer compns. contg. antistatic agents and alkylenebis(fatty amides))
IT 100-99-2, Triisobutylaluminum, uses 135072-61-6,
(tert-Butylamido)dimethyl(tetramethyl-.eta.5-cyclopentadienyl)silane
titanium dichloride
(metallocene-catalyzed ethylene-styrene random copolymer compns. contg. antistatic agents and alkylenebis(fatty amides))
- L39 ANSWER 12 OF 34 HCA COPYRIGHT 2003 ACS on STN W
133:180336 Secondary lithium ion **batteries** with long cycle life. Sano, Mitsuru; Inoue, Takao (Japan). Jpn. Kokai Tokkyo Koho JP 2000223152 A2 20000811, 7 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1999-80237 19990216. PRIORITY: JP 1998-375255 19981124.
- AB The **batteries** contain a Li⁺ conductive lower alkyl trialkylsilyl compd. insulator between the **battery** electrodes. Preferably, the lower alkyl trialkylsilyl compd. has a general formula of -NHSiR₃; R₂C[(:N)Si(R₁)₃][OSi(R₁)₃]; R₂CONHSi(R₁)₃; R₃SiNHCONHSiR₃; R₂COOSi(R₁)₃; R₃SiNHS(SiR₃)O₂; or -NHSiR₂NH-, in which (R = lower alkyl group) or -OSiR₃, (-NH)₂SiR₂; R₁ = lower alkyl, R₂ = lower fluoro- or chloro-alkyl groups.
- IT 18156-74-6

(electrolyte solns. contg. lower alkyl trialkylsilyl derivs. for secondary lithium **batteries** with lithium manganese oxide cathodes)

RN 18156-74-6 HCA

CN 1H-Imidazole, 1-(trimethylsilyl)- (9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery** silyl deriv

IT **Battery electrolytes**

(electrolyte solns. contg. lower alkyl trialkylsilyl derivs. for secondary lithium **batteries** with lithium manganese oxide cathodes)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
616-38-6, Dimethyl carbonate 12057-17-9, Lithium manganese oxide
(LiMn2O4) 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium
hexafluorophosphate 33454-82-9, Lithium trifluoromethanesulfonate
(electrolyte solns. contg. lower alkyl trialkylsilyl
derivs. for secondary lithium **batteries** with lithium
manganese oxide cathodes)

IT 400-53-3 999-97-3, Hexamethyldisilazane 1020-84-4 10416-59-8
13435-12-6 18156-74-6 18187-06-9 18297-63-7
25561-30-2

(electrolyte solns. contg. lower alkyl trialkylsilyl derivs. for secondary lithium **batteries** with lithium manganese oxide cathodes)

L39 ANSWER (13) OF 34 HCA COPYRIGHT 2003 ACS on STN

132:188093 Single ion conduction in polyether **electrolytes**

? alloyed with lithium salt of a perfluorinated polyimide. Watanabe, Masayoshi; Suzuki, Yusuke; Nishimoto, Astushi (Department of Chemistry & Biotechnology, Yokohama National University, Yokohama, 240-8501, Japan). *Electrochimica Acta*, 45(8-9), 1187-1192 (English) 2000. CODEN: ELCAAV. ISSN: 0013-4686. Publisher: Elsevier Science Ltd..

3 Jan. 2000
AB A new methodol. to obtain single-ion-conducting **polymer electrolytes** is proposed. A polymeric salt, lithium salt of poly(2-oxo-1-difluoroethylene sulfonylimide) (LiPI), has a structure resembling recently developed highly dissociable imide salts such as lithium bis(trifluoromethylsulfonyl)imide (LiTFSI) and is considered as their polymer analog. The polymer salt is expected to dissoc. in an org. solvent and even in a polyether solvent, and to exhibit similar electrochem. stability to LiTFSI. **Polymer electrolytes** were prepd. by dissolving LiPI in polyether

pyrim "alg"?
intervening date
relevant?

networks to afford a compatible polymer alloy. Lithium transference no. of the **polymer electrolytes** is unity, though the ionic cond. was not sufficiently high. The cond. greatly increased by adding a highly polar solvent, ethylene carbonate, to the **polymer alloy electrolytes**.

IT 197378-70-4P

(single ion conduction in polyether **electrolytes** alloyed with lithium salt of a perfluorinated polyimide)

RN 197378-70-4 HCA

CN Acetyl fluoride, difluoro(fluorosulfonyl)-, polymer with 1,1,1-trimethyl-N-(trimethylsilyl)silanamine lithium salt (9CI) (CA INDEX NAME)

CM 1

CRN 4039-32-1

CMF C6 H19 N Si2 . Li

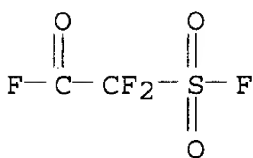
Me₃Si-NH-SiMe₃

● Li

CM 2

CRN 677-67-8

CMF C2 F4 O3 S



CC 76-2 (Electric Phenomena)

ST single ion conducting **polymer solid electrolyte**

IT Polyimides, properties

(perfluorinated; single ion conduction in polyether **electrolytes** alloyed with lithium salt of a perfluorinated polyimide)

IT Conducting polymers

Solid **electrolytes**

(single ion conduction in polyether **electrolytes** alloyed with lithium salt of a perfluorinated polyimide)

IT 7439-93-2DP, Lithium, perfluorinated polyimide salt, properties
197378-70-4P

(single ion conduction in polyether **electrolytes**)

alloyed with lithium salt of a perfluorinated polyimide)

L39 ANSWER 14 OF 34 HCA COPYRIGHT 2003 ACS on STN

130:237977 Bimetallic complexes and catalysts for polymerization of olefins, diolefins, and acetylenically unsaturated compounds. Patton, Jasson T.; Marks, Tobin J.; Li, Liting (The Dow Chemical Company, USA). PCT Int. Appl. WO 9914222 A1 19990325, 41 pp.

DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG.

(English). CODEN: PIXXD2. APPLICATION: WO 1998-US17860 19980828.

PRIORITY: US 1997-60712 19970915; US 1998-92294 19980710.

AB Group 3-6 or Lanthanide metal complexes possessing 2 metal centers are useful as catalysts when combined/activated with strong Lewis acids, Broensted acid salts, salts contg. a cationic oxidizing agent or subjected to bulk **electrolysis** in the presence of compatible, inert noncoordinating anions, for polymg. olefins, diolefins and/or acetylenically unsatd. monomers. Ethylene was polymd. at 90.degree. in the presence of tris(pentafluorophenyl)borane and bis(trimethylsilylmethyl)(N-(1,1-dimethylethyl)-1-((1,2,3,3a,7a-.eta.)-1H-inden-1-yl)-1,1-dimethylsilanaminato(2-)-N)-2,2'-(1,5-pentanediy)l)bistitanium.

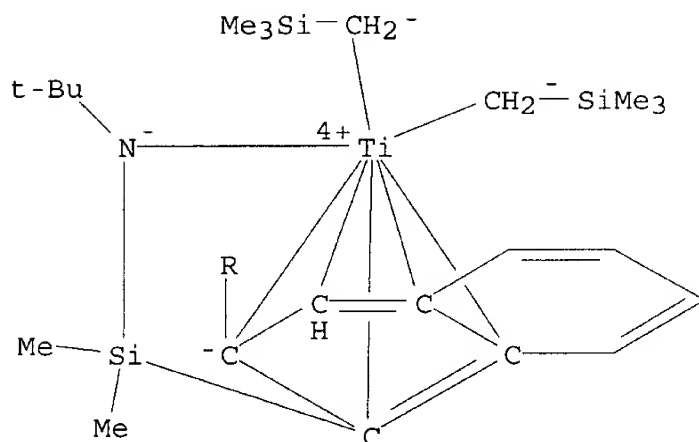
IT 221393-97-1P 221394-01-0P 221394-03-2P

(bimetallic complexes and catalysts for polymn. of olefins, diolefins, and acetylenically unsatd. compds.)

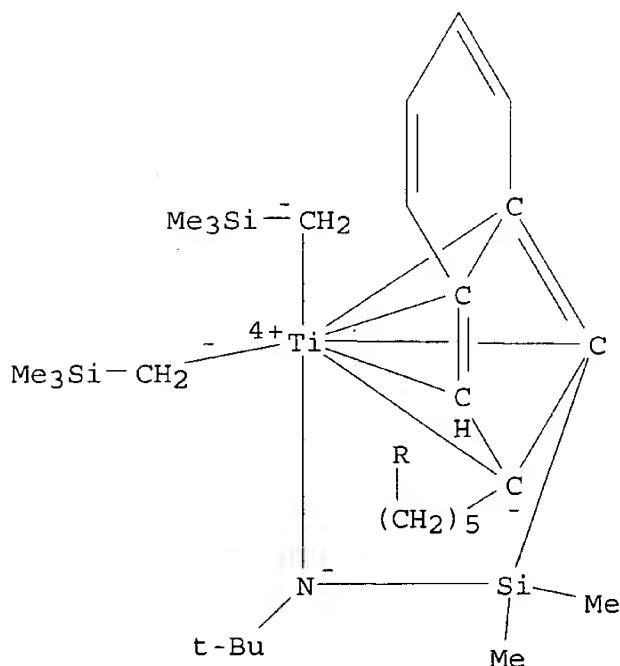
RN 221393-97-1 HCA

CN Titanium, [.mu.-[[.eta.5:.eta.5-1,1'-(1,5-pentanediyldi-2H-indene-2,1-diyl)bis[N-(1,1-dimethylethyl)-1,1-dimethylsilanaminato-.kappa.N]](4-))]tetrakis[(trimethylsilyl)methyl]di- (9CI) (CA INDEX NAME)

PAGE 1-A

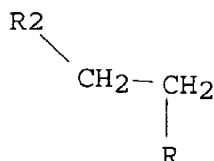


PAGE 2-A

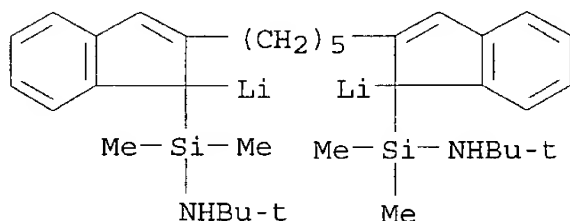


RN 221394-01-0 HCA
 CN Titanium, [.mu.-[[.eta.5:.eta.5-1,1'-(1,2-ethanediyl)-1H-indene-1,3-
 diyl]bis[N-(1,1-dimethylethyl)-1,1-dimethylsilanaminato-.kappa.N]](4-
)]]tetramethyldi- (9CI) (CA INDEX NAME)

PAGE 3-A



- IT 221393-95-9P
 (catalyst intermediate; bimetallic complexes and catalysts for
 polymn. of olefins, diolefins, and acetylenically unsatd.
 compds.)
- RN 221393-95-9 HCA
- CN Lithium, [.mu.-[1,5-pentanediy]bis[1-[[1,1-
 dimethylethyl)amino]dimethylsilyl]-1H-indene-2,1-diyl]]di-,
 dilithium salt (9CI) (CA INDEX NAME)



● 2 Li

- IC ICM C07F017-00
 ICS C08F010-00
- CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 29
- IT 221393-97-1P 221394-01-0P 221394-03-2P
 (bimetallic complexes and catalysts for polymn. of olefins,
 diolefins, and acetylenically unsatd. compds.)
- IT 221393-96-0P 221394-02-1P
 (bimetallic complexes and catalysts for polymn. of olefins,
 diolefins, and acetylenically unsatd. compds.)
- IT 221393-94-8P 221393-98-2P 221393-99-3P
 221394-00-9P
 (bimetallic complexes and catalysts for polymn. of olefins,
 diolefins, and acetylenically unsatd. compds.)
- IT 221393-93-7P 221393-95-9P
 (catalyst intermediate; bimetallic complexes and catalysts for
 polymn. of olefins, diolefins, and acetylenically unsatd.
 compds.)

L39 ANSWER (15) OF 34 HCA COPYRIGHT 2003 ACS on STN

124:214464 Intramolecular Anodic Olefin Coupling Reactions and the Use of Electron-Rich Aryl Rings. New, Dallas G.; Tesfai, Zerom; Moeller, Kevin D. (Department of Chemistry, Washington University, St. Louis, MO, 63130, USA). Journal of Organic Chemistry, 61(5), 1578-98 (English) 1996. CODEN: JOCEAH. ISSN: 0022-3263. Publisher: American Chemical Society.

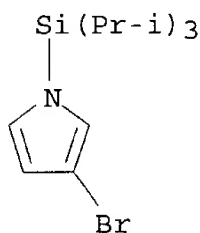
AB The utility of intramol. anodic olefin coupling reactions involving electron-rich arom. rings for constructing fused, bicyclic ring skeletons was examd. Reactions involving alkoxy-substituted Ph rings benefit strongly from a 3-methoxy substituent on the Ph ring. Although overoxidn. of the bicyclic product was obsd. in these reactions, this problem could be minimized using controlled potential **electrolysis** conditions when a monomethoxy Ph ring was used and avoided entirely using a vinyl sulfide moiety as the initiator when a more electron-rich Ph ring was used. Reactions involving 4-alkoxy-substituted Ph rings as substrates did not lead to good yields of fused products. Furan rings are excellent coupling partners for the reactions and afforded products having fused, bicyclic furan ring skeletons. Cyclizations involving furans are compatible with the formation of both six- and seven-membered rings, the generation of a quaternary carbon, and the use of a variety of electron-rich olefins as the other coupling partner. Apparently the furan can serve as either the initiating group or the terminating group for the cyclizations. Finally, the reactions are compatible using a pyrrole ring as one of the participants.

IT 87630-36-2

(in ((triisopropylsilyl)pyrrolyl)(2tetrahydropyranoxy)butanol prepn.)

RN 87630-36-2 HCA

CN 1H-Pyrrole, 3-bromo-1-[tris(1-methylethyl)silyl]- (9CI) (CA INDEX NAME)

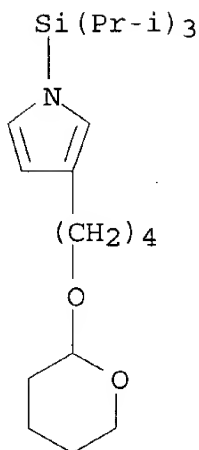


IT 174506-24-2P

(prepn. and use in (pivaloylpyrrolyl)butanol prepn.)

RN 174506-24-2 HCA

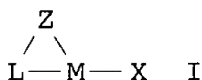
CN 1H-Pyrrole, 3-[4-[(tetrahydro-2H-pyran-2-yl)oxy]butyl]-1-[tris(1-methylethyl)silyl]- (9CI) (CA INDEX NAME)



CC 72-4 (Electrochemistry)
 Section cross-reference(s): 22, 25, 27
 IT **87630-36-2**
 (in ((triisopropylsilyl)pyrrolyl)(2tetrahydropyranoxy)butanol
 prepn.)
 IT **174506-24-2P**
 (prepn. and use in (pivaloylpyrrolyl)butanol prepn.)

L39 ANSWER 16 OF 34 HCA COPYRIGHT 2003 ACS on STN w
 123:257778 Titanium(II) or zirconium(II) complexes and addition
 polymerization catalysts therefrom. Devore, David D.; Crawford,
 Lenore H.; Stevens, James C.; Timmers, Francis J.; Mussell, Robert
 D.; Wilson, David R.; Rosen, Robert K. (Dow Chemical Co., USA). PCT
 Int. Appl. WO 9500526 A1 19950105, 58 pp. DESIGNATED STATES: W:
 AU, BR, CA, CN, CZ, FI, HU, JP, KR, NO, NZ, PL, RO, RU; RW: AT, BE,
 CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English).
 CODEN: PIXXD2. APPLICATION: WO 1994-US6834 19940616. PRIORITY: US
 1993-82197 19930624; US 1994-230051 19940419; US 1994-241523
 19940512.

GI



AB The title complexes contain one and only one cyclic delocalized,
 anionic, .pi.-bonded, group, shown by the formula I, wherein M is
 titanium or zirconium in the +2 formal oxidn. state; L is a group
 contg. a cyclic, delocalized, anionic, .pi.-system through which the
 group is bound to M, and which group is also bound to Z; Z is a
 moiety bound to M via a .sigma.-bond, comprising boron, or a member

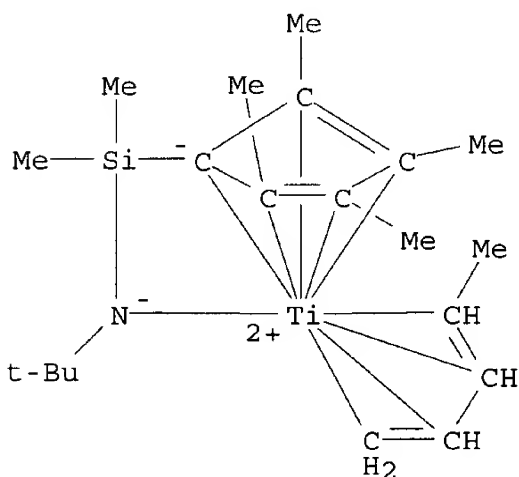
of Group 14 of the Periodic Table of the Elements, and also comprising N, P, S or O, said moiety having up to 60 non-hydrogen atoms; and X is a neutral, conjugated or nonconjugated diene, optionally substituted with one or more hydrocarbyl groups, said X having up to 40 carbon atoms and forming a π -complex with M; are catalytically activated for use as addn. polymn. catalysts. Preferably, L is an (un)substituted cyclopentadienyl or fused ring cyclopentadienyl group. (Tert-butylamido)(tetramethyl- η -5-cyclopentadienyl)dimethylsilane-titanium s-trans- η -4-1,4-trans,trans-diphenyl-1,3-butadiene was prepd., **electrolyzed** using tetrabutylammonium tetrakis(pentafluorophenyl)borate as supporting **electrolyte** in 1,2-difluorobenzene, extd. with toluene and used directly for polymn. of ethylene and 1-octene with tris(pentafluorophenyl) borate cocatalyst with catalyst efficiency 626 kg/g-Ti.

IT 165658-65-1 167286-93-3 168889-53-0
168889-68-7 168889-69-8 169104-74-9
169104-75-0 169104-76-1 169104-77-2
169104-78-3

(titanium(II) or zirconium(II) complexes and addn. polymn. catalysts therefrom)

RN 165658-65-1 HCA

CN Titanium, [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5- η)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)- κ .N] [(1,2,3,4- η)-1,3-pentadiene]-, stereoisomer (9CI) (CA INDEX NAME)



RN 167286-93-3 HCA

CN Titanium, [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5- η)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)- κ .N] [(2,3,4,5- η)-2,4-hexadiene]-, stereoisomer (9CI) (CA INDEX NAME)

169104-74-9 169104-75-0 169104-76-1

169104-77-2 169104-78-3

(titanium(II) or zirconium(II) complexes and addn. polymn. catalysts therefrom)

IT 167286-95-5P 168889-55-2P 168889-57-4P

168889-58-5P 168889-59-6P 168889-61-0P

168889-66-5P 169104-71-6P 169104-72-7P

169104-73-8P

(titanium(II) or zirconium(II) complexes and addn. polymn. catalysts therefrom)

IT 18631-68-0P, 4,5,6,7-Tetrahydro-1-methylindan-3-one 65413-33-4P

148893-03-2P 168889-62-1P 168889-63-2P

168889-64-3P, Magnesium (di-.mu.-chloro[.mu.-[N-(1,1-dimethylethyl)-1-(1,3-dimethyl-2H-inden-2-yl)-1,1-dimethylsilanaminato(2-)]][1,1'-oxybis[ethane]]di-)

168889-65-4P 168889-67-6P

(titanium(II) or zirconium(II) complexes and addn. polymn. catalysts therefrom)

IT 109-72-8, Butyllithium, reactions 110-83-8, Cyclohexene, reactions

504-60-9, 1,3-Pentadiene 538-81-8 592-46-1, 2,4-Hexadiene

594-19-4, tert-Butyllithium 603-35-0, Triphenylphosphine,

reactions 917-54-4, Methyllithium 1068-55-9, Isopropylmagnesium chloride 3724-65-0, 2-Butenoic acid 4549-74-0,

3-Methyl-1,3-pentadiene 7439-93-2, Lithium, reactions 7439-95-4,

Magnesium, reactions 7550-45-0, Titanium tetrachloride, reactions

7705-07-9, Titanium trichloride, reactions 14371-10-9,

trans-Cinnamaldehyde 18880-00-7, 4-tert-Butylbenzyl bromide

37367-99-0, Potassium graphite 60556-33-4 135072-61-6

135539-49-0 135539-59-2 168889-54-1

168889-56-3 168889-60-9

(titanium(II) or zirconium(II) complexes and addn. polymn. catalysts therefrom)

L39 ANSWER (17) OF 34 HCA COPYRIGHT 2003 ACS on STN

123:13641 Solid-electrolyte separators based on binary

nitrides for high-temperature lithium storage **batteries**.

Batalov, N. N.; Zheltonozhko, O. V.; Zarembo, S. N.; Akhmetzhanov, T. M.; Volkova, O. V.; Zelyutin, G. V.; Obrosova, V. P.; Tamm, V. Kh.

(Inst. High-Temp. Electrochemistry, Russian Academy Sciences,

Ekaterinburg, 620219, Russia). Russian Journal of Electrochemistry

(Translation of Elektrokimiya), 31(4), 356-64 (English) 1995.

CODEN: RJELE3. ISSN: 1023-1935. Publisher: MAIK

Nauka/Interperiodica.

AB Thermodyn. evaluations of corrosion resistance of solid

electrolytes with resp. to lithium at high temps. are

performed. Solid **electrolytes** on the basis binary lithium nitrides and elements of groups II to VI are shown to be among the

most corrosion resistant, in contact with lithium, lithium cation

conductors. Data on conductance of such **electrolytes** as

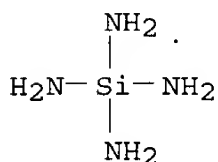
well as polarization curves for lithium-solid **electrolyte**

and solid **electrolyte**-molten **electrolyte**

interfaces are presented. Polarization resistances of these

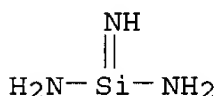
interfaces in nitride **electrolytes** are found to be much lower than those in oxide **electrolytes**. Text results on a breadboard lithium storage **battery** with a solid **electrolyte** separator made of Li_3AlN_2 are reported.

IT 12521-66-3, Lithium silicon nitride Li_8SiN_4
 67181-65-1, Lithium silicon nitride Li_5SiN_3
 (elec. cond. of solid **electrolyte** separators for
 high-temp. lithium storage **batteries**)
 RN 12521-66-3 HCA
 CN Silanetetramine, octalithium salt (9CI) (CA INDEX NAME)



●8 Li

RN 67181-65-1 HCA
 CN Silanediamine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



●5 Li

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST lithium **battery** separator nitride based
electrolyte; aluminum lithium nitride **battery**
 separator
 IT Electric conductivity and conduction
 (elec. cond. of solid **electrolyte** separators for
 high-temp. lithium storage **batteries**)
 IT **Battery electrolytes**
 (solid-**electrolyte** separators based on binary nitrides
 for high-temp. lithium storage **batteries**)
 IT **Batteries, primary**
 (separators, solid-**electrolyte** separators based on
 binary nitrides for high-temp. lithium storage **batteries**
)
 IT 11113-26-1, Lithium zirconium nitride Li_2ZrN_2 12232-41-6,
 Beryllium lithium oxide $\text{Be}_2\text{Li}_2\text{O}_3$ 12521-66-3, Lithium

silicon nitride li8sin4 55071-16-4, Hafnium lithium nitride (HfLi2N2) 61027-73-4, Aluminum lithium nitride alli3n2 61029-38-7, Lithium titanium nitride li5tin3 67181-65-1, Lithium silicon nitride li5sin3 127922-16-1, Chromium lithium nitride oxide cr2li14n8o 163780-40-3, Beryllium lithium oxide (BeLi6O4)

(elec. cond. of solid **electrolyte** separators for high-temp. lithium storage **batteries**)

L39 ANSWER 18 OF 34 HCA COPYRIGHT 2003 ACS on STN

122:240593 Siloxane and Organosilicon Dimers, Monomers, and Polymers with Amide-Linked Ferrocenyl Moieties. Synthesis, Characterization, and Redox Properties. Casado, Carmen M.; Moran, Moises; Losada, Jose; Cuadrado, Isabel (Facultad de Ciencias, Universidad Autonoma de Madrid, Madrid, 28049, Spain). Inorganic Chemistry, 34(7), 1668-80 (English) 1995. CODEN: INOCAJ. ISSN: 0020-1669. Publisher: American Chemical Society.

AB Polymers [-Si(CH3)2(CH2)3NHC(O)(.eta.5-C5H4)Fe(.eta.5-C5H4)C(O)NH(CH2)3Si(CH3)2O-]n, and [-C6H4C(O)NHCH2CH2(.eta.5-C5H4)Fe(.eta.5-C5H4)CH2CH2NHC(O)C6H4Si(CH3)2-]n, in which the amide-linked ferrocenyl moieties are part of the main polymer chain, have been prep'd. via soln. and interfacial polycondensations. As an aid to the spectroscopic and electrochem. characterization, the corresponding dimeric model compds. [{.eta.5-C5H5}Fe{.eta.5-C5H4C(O)NH(CH2)3Si(CH3)2}]2-O, and [{.eta.5-C5H5}Fe{.eta.5-C5H4CH2CH2NHC(O)(C6H4)}]2SiMe2 were synthesized. Electrochem. measurements show that in the model compds. the oxidn. wave represents a two-electron process, as expected for independent reversible one-electron transfer, at the same potential, of the two ferrocenyl moieties. The cationic dimetallic species [12+][PF6-]2 and [22+][PF6-]2 have been generated and characterized via IR spectroelectrochem. A redox-active monomer, {.eta.5-C5H5}Fe{.eta.5-C5H4C(O)NH(CH2)3SiCH3(OCH2CH3)2}, has been successfully attached to Pt electrodes and to silica surfaces, via siloxane bond formation. In addn., a series of poly(methylsiloxanes), contg. pendant ferrocenyl moieties attached to the polymer backbone through amide linkages, with varying degrees of ferrocene substitution, were prep'd. and characterized. Soln. electrochem. studies showed that all the ferrocenyl redox centers present in the polymers are electrochem. independent, and that neutral poly(methylsiloxanes) undergo oxidative pptn., yielding polymer films on the platinum electrode surfaces. The electrochem. of electrodes modified with electroactive films of ferrocene-contg. polysiloxanes was studied by cyclic voltammetry. Amperometric glucose sensing electrodes based on a ferrocene-contg. poly(methylsiloxane) have been prep'd.

IT 10519-97-8DP, N-Trimethylsilylallylamine, reaction products with Me H siloxane copolymer and chlorocarbonylferrocene or bis(chlorocarbonylferrocene)

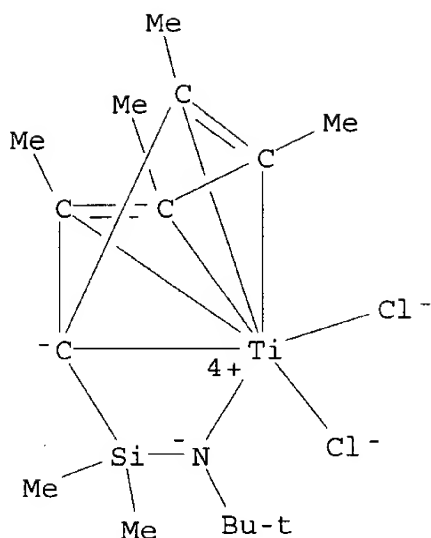
(prepn. and electrochem. properties of siloxanes contg. amide and ferrocenyl groups in main or side chains)

RN 10519-97-8 HCA

CN Silanamine, 1,1,1-trimethyl-N-2-propenyl- (9CI) (CA INDEX NAME)

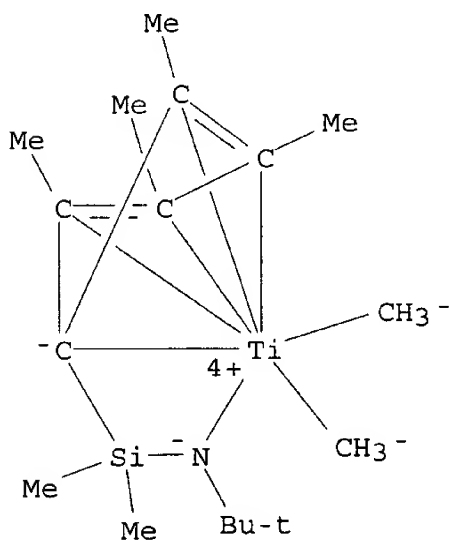


- CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 9, 38, 72
- IT 1293-79-4DP, Chlorocarbonylferrocene, reaction products with aminoalkylated Me H siloxane copolymers 10519-97-8DP, N-Trimethylsilylallylamine, reaction products with Me H siloxane copolymer and chlorocarbonylferrocene or bis(chlorocarbonylferrocene) 41312-65-6DP, (.beta.-Aminoethyl)ferrocene, reaction products with hydrolyzed (cyanopropyl)methyldichlorosilane homopolymer derivs. 156118-35-3DP, aminoalkylated, reaction products with chlorocarbonylferrocene or bis(chlorocarbonylferrocene) 162439-01-2P 162439-02-3P 162476-94-0P 162476-95-1P (prepn. and electrochem. properties of siloxanes contg. amide and ferrocenyl groups in main or side chains)
- IT 2052-49-5, Tetrabutylammonium hydroxide (supporting **electrolyte**; electrochem. properties of electrodes modified by siloxanes contg. amide and ferrocenyl groups in presence of)
- L39 ANSWER 19 OF 34 HCA COPYRIGHT 2003 ACS on STN
122:91520 Electrochemical preparation of addition polymerization catalysts. Devore, David D.; Mussell, Robert D.; Stevens, James C.; Timmers, Francis J. (Dow Chemical Company, USA). U.S. US 5372682 A 19941213, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1993-82201 19930624.
- AB Group 4 metal complexes useful as addn. polymn. catalysts are prepd. by **electrolysis** of cyclopentadienyl metal complexes under inert **electrolysis** conditions.
- IT 135072-61-6 135072-62-7 141217-57-4 144885-25-6 (for electrochem. prepn. of addn. polymn. catalysts)
- RN 135072-61-6 HCA
- CN Titanium, dichloro[N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N]- (9CI) (CA INDEX NAME)



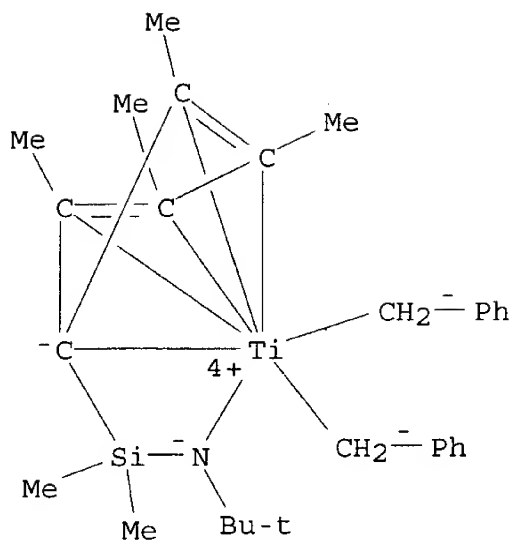
RN 135072-62-7 HCA

CN Titanium, [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N]dimethyl- (9CI) (CA INDEX NAME)



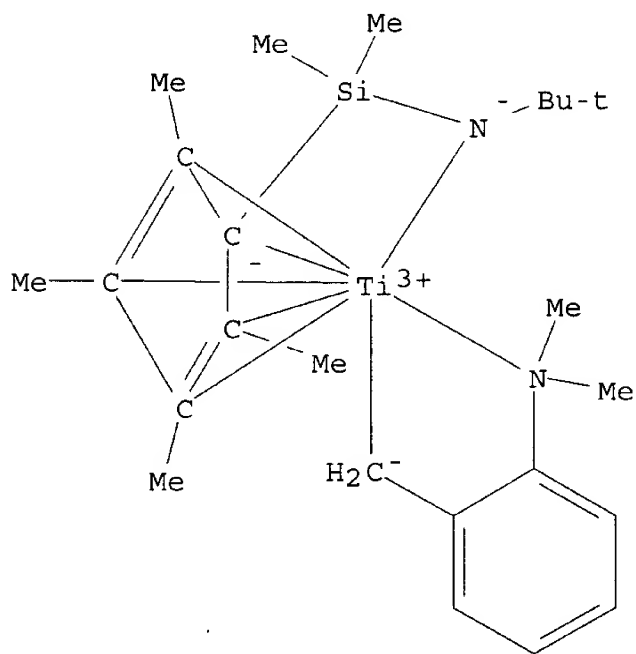
RN 141217-57-4 HCA

CN Titanium, [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N]bis(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 144885-25-6 HCA

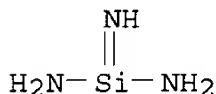
CN Titanium, [[2-(dimethylamino-.kappa.N)phenyl]methyl-.kappa.C] [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[(1,2,3,4,5-.eta.)-2,3,4,5-tetramethyl-2,4-cyclopentadien-1-yl]silanaminato(2-)-.kappa.N] - (9CI) (CA INDEX NAME)



IC ICM C25B003-12

NCL 204072000

- CC 72-4 (Electrochemistry)
Section cross-reference(s): 22, 35
- ST addn polymn catalyst electrochem prepn; Group 4 metal complex catalyst; **electrolysis** cyclopentadienyl metal complex catalyst prepn
- IT 135072-61-6 135072-62-7 141217-57-4
144885-25-6
(for electrochem. prepn. of addn. polymn. catalysts)
- L39 ANSWER 20 OF 34 HCA COPYRIGHT 2003 ACS on STN
121:283553 Double nitrides as promising materials for solid **electrolyte** separators of advanced thermal lithium secondary **batteries**. Zheltonozhko, O. V.; Obrosof, V. P.; Batalov, N. N.; Korzun, I. V. (Institute High-Temperature Electrochemistry, Russian Academy Sciences, Yekaterinburg, 620219, Russia). Proceedings - Electrochemical Society, 93-9 (MOLTEN SALT CHEMISTRY AND TECHNOLOGY 1993), 578-83 (English) 1993. CODEN: PESODO. ISSN: 0161-6374.
- AB A no. of double nitrides (DN) has been investigated as promising separator materials for advanced Li **batteries**. The DN compns. investigated were Li₃AlN₂, LiMgN, Li₅TiN₃, Li₅SiN₃, Li₂ZrN₂, and Li₁₄Cr₂N₈O. Causes of the beginning of electrochem. degrdn. of DNs have been studied by coulometric titrn. technique. It has been established that there are narrow homogeneity regions of DNs and Li. Also, other thermodyn. parameters of electron subsystem of DNs as well as the true decompn. voltage have been detd. Thermodyn. functions of enthalpy, entropy, free energy, and heat capacity for the double nitrides were calcd. in the temp. range 770-1200 K.
- IT 67181-65-1, Lithium silicon nitride (Li₅SiN₃)
(solid **electrolyte** separator for advanced thermal lithium secondary **batteries**)
- RN 67181-65-1 HCA
- CN Silanediimine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



● 5 Li

- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 69
- ST nitride solid **electrolyte** separator **battery**; lithium **battery** nitride solid **electrolyte** separator
- IT **Batteries**, secondary
(separators, double nitrides as solid **electrolyte** separators for advanced thermal lithium secondary

batteries)

IT 11113-26-1, Lithium zirconium nitride (Li_2ZrN_2) 61027-73-4,
Aluminum lithium nitride (AlLi_3N_2) 61029-38-7, Lithium titanium
nitride (Li_5TiN_3) 66905-66-6, Lithium magnesium nitride (LiMgN)
67181-65-1, Lithium silicon nitride (Li_5SiN_3) 127922-16-1,
Chromium lithium nitride oxide ($\text{Cr}_2\text{Li}_{14}\text{N}_8\text{O}$)
(solid **electrolyte** separator for advanced thermal
lithium secondary **batteries**)

L39 ANSWER **(21)** OF 34 HCA COPYRIGHT 2003 ACS on STN

121:220335 Ca^{2+} sensor with amphiphilic Langmuir-Blodgett membranes.
Kauffmann, F.; Hoffmann, B.; Erbach, R.; Heiliger, L.; Siegmund,
H.-U.; Voelker, M. (Universitaet Karlsruhe, Institut fuer
Technologie der Elektrotechnik, Hertzstrasse 16, Karlsruhe, D-76187,
Germany). Sensors and Actuators, B: Chemical, 18(1-3), 60-4
(English) 1994. CODEN: SABCEB. ISSN: 0925-4005.

AB Ca^{2+} sensors of high sensitivity and stability can be fabricated by
coating Si/SiO₂ devices with specially synthesized Langmuir-Blodgett
(LB) membranes. The Ca^{2+} sensitive LB-material is an amphiphilic
copolymer contg. covalently bound ionophoric groups. A thin cover
layer of hydrophobic rod-like LB-polymers increases the sensor
stability in contact with **electrolytes**. The membrane show
a high Ca^{2+} sensitivity of 23 mV/pCa in the range 10⁻⁴ to 1 mol/L
and a small baseline drift of <1 mV/day over a period of at least 3
mo. The sensor response after concn. changes was very fast with a
response time of <20 s. The sensors can be produced at low cost.
Miniaturization is possible. Applications are in the fields of
measuring H₂O hardness or as a cheap substitute for conventional
 Ca^{2+} electrodes.

IT **156822-35-4**

(in Langmuir-Blodgett membranes for calcium sensors)

RN 156822-35-4 HCA

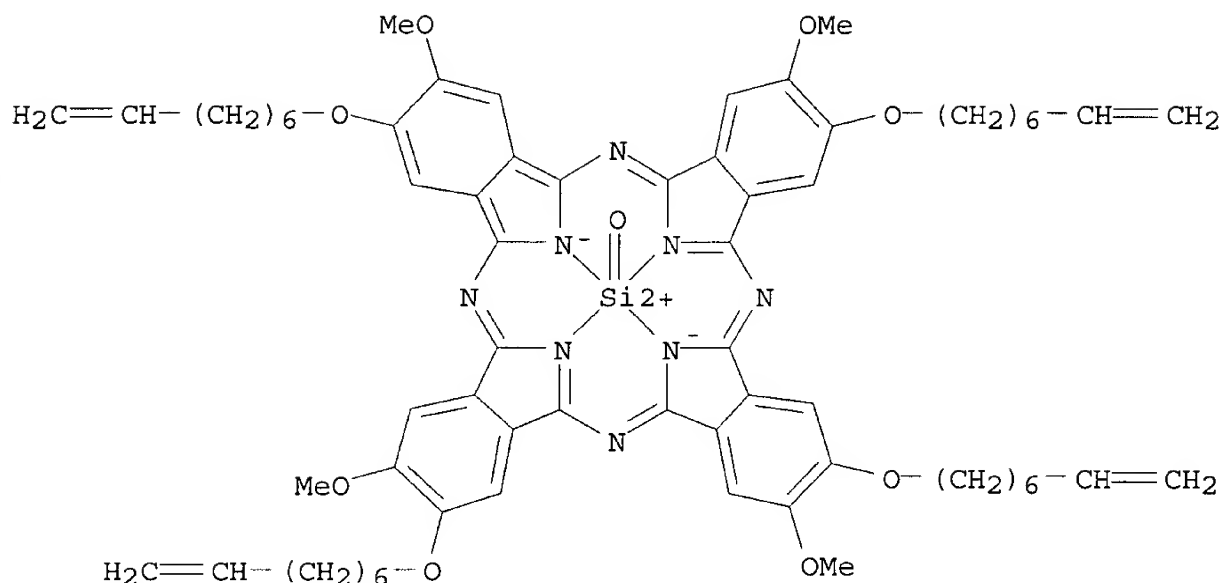
CN Silicon, oxo[2,9,16,23-tetramethoxy-3,10,17,24-tetrakis(7-
octenyloxy)-29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32]-,
(SP-5-13)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 156822-34-3

CMF C68 H80 N8 O9 Si

CCI CCS



CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 38, 61, 72
 IT 142250-24-6 156822-35-4 158169-48-3
 (in Langmuir-Blodgett membranes for calcium sensors)

Lithium?

L39 ANSWER (22) OF 34 HCA COPYRIGHT 2003 ACS on STN
 118:255572 Preparation of poly(glycidyl ether)-grafted polystyrene derivatives. Endo, Takeshi; Nanbu, Yoko (Asahi Denka Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 04332728 A2 19921119 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-104188 19910509.

AB The title **polymers** useful as **electrolytes** are prepd. by polymn. of ZOR (R = alkyl; Z = glycidyl) by using inorg. fluorides as catalysts and polystyrene derivs. $[\text{CH}_2\text{CH}(\text{C}_6\text{H}_4\text{OSiR}_3)]_n$ (R1 = C1-5 alkyl; n = 1-5) as initiators. Thus, heating glycidyl Me ether 0.3, CsF 0.003, and poly(trimethylsilyloxystyrene) [no.-av. mol. wt. (Mn) 1020] 0.006 mmol in 27 mL dioxane at 130.degree. for 30 min gave a graft polymer having Mn 4710.

IT 999-97-3D, Hexamethyldisilazane, reaction products with poly(hydroxystyrene)
 (initiators, for glycidyl ether grafting)

RN 999-97-3 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

$\text{Me}_3\text{Si}-\text{NH}-\text{SiMe}_3$

IC ICM C08G065-26
 ICS C08F008-42; C08F030-08

CC 35-7 (Chemistry of Synthetic High Polymers)
IT 999-97-3D, Hexamethyldisilazane, reaction products with
poly(hydroxystyrene) 59269-51-1D, Poly(hydroxystyrene), reaction
products with hexamethyldisilazane
(initiators, for glycidyl ether grafting)

L39 ANSWER 23 OF 34 HCA COPYRIGHT 2003 ACS on STN
117:61713 Application of rod-like polymers with ionophores as
Langmuir-Blodgett membranes for silicon-based ion sensors. Erbach,
R.; Hoffmann, B.; Schaub, M.; Wegner, G. (Inst. Technol.
Elektrotech., Univ. Karlsruhe, Karlsruhe, D-7500/21, Germany).
Sensors and Actuators, B: Chemical, B6(1-3), 211-16 (English) 1992.
CODEN: SABCEB. ISSN: 0925-4005.

AB By using special Langmuir-Blodgett films as a carrier for ionophores
it is possible to manuf. highly sensitive and selective sensor
membranes. As an example a Na sensor is presented with a const.
sensitivity of 53 mV/pNa for more than 61 days and a small baseline
drift of only 1 mV/day. This is achieved by mixing a com. Na
ionophore with a stable LB material before film deposition. Best
results are obtained with a cross-linked cover layer serving as a
diffusion barrier for the ionophores but not for the ions to be
detected. The same LB material as before but without ionophores can
be used as a ref. membrane in a new capacitive sensor system (CSS).
The special advantage of the sensor system with sensor and ref.
membranes made of the same basic material is that the influence of
disturbing ions in the **electrolyte** is automatically
compensated. The presented sensor system can easily be produced at
low cost. Miniaturization is possible. Two examples of the sensor
system are given for pH and for Na measurements.

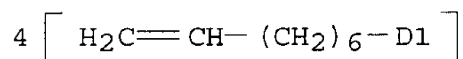
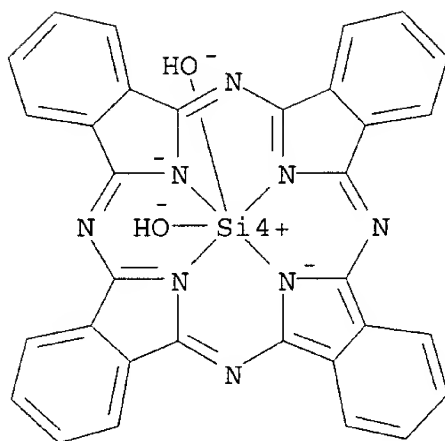
IT 142172-70-1
(Langmuir-Blodgett films of, in electrochem. ion sensors)

RN 142172-70-1 HCA
CN Silicon, dihydroxy[C,C,C,C-tetramethyl-C,C,C,C-tetra-7-octenyl-
29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32]-, homopolymer (9CI)
(CA INDEX NAME)

CM 1

CRN 142172-69-8
CMF C68 H82 N8 O2 Si
CCI CCS, IDS

PAGE 1-A



PAGE 2-A

4 (D1-Me)

CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 38, 72, 76

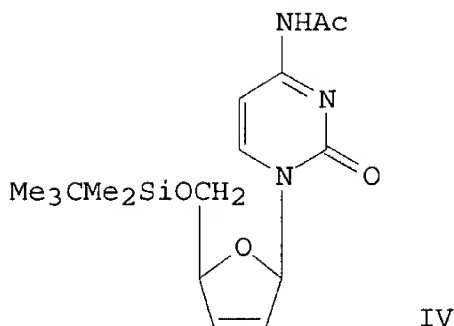
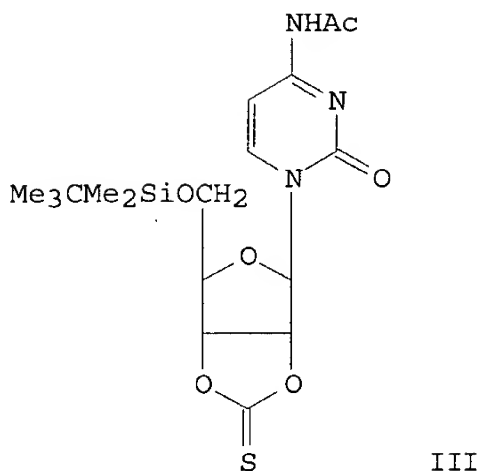
IT **142172-70-1**

(Langmuir-Blodgett films of, in electrochem. ion sensors)

L39 ANSWER (24) OF 34 HCA COPYRIGHT 2003 ACS on STN

116:255959 Syntheses of the anti-AIDS drug 2',3'-dideoxycytidine from cytidine. Manchand, Percy S.; Belica, Peter S.; Holman, Michael J.; Huang, Tai Nang; Maehr, Hubert; Tam, Steve Y. K.; Yang, Roxana T. (Roche Res. Cent., Hoffmann-La Roche Inc., Nutley, NJ, 07110, USA). Journal of Organic Chemistry, 57(12), 3473-8 (English) 1992. CODEN: JOCEAH. ISSN: 0022-3263. OTHER SOURCES: CASREACT 116:255959.

GI



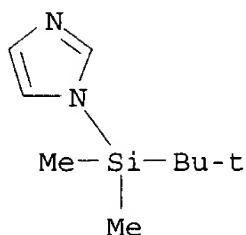
AB Two efficient syntheses of the anti-AIDS drug 2',3'-dideoxycytidine (I) from N4-acetylcytidine (II) in 27-40% overall yield, are described. In one, silylation of the C-5' hydroxyl group of II with tert-butyldimethylsilyl chloride followed by treatment with 1',1'-(thiocarbonyl)dimidazole gave the cyclic thionocarbonate III, which on reaction with 1,3-dimethyl-2-phenyl-1,3-diazaphospholidine gave the cryst. alkene IV, which was reduced to I in 27% overall yield from II. In the other synthesis, II was converted into I via bromoacetylation, reductive elimination or **electrolysis**, and hydrogenation. In a through process, which is suitable for large-scale work, this second synthesis gave I in over 40% overall yield from II.

IT 54925-64-3

(silylation by, of N-acetylcytidine)

RN 54925-64-3 HCA

CN 1H-Imidazole, 1-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)



CC 33-9 (Carbohydrates)

IT 54925-64-3

(silylation by, of N-acetylcytidine)

L39 ANSWER (25) OF 34 HCA COPYRIGHT 2003 ACS on STN

113:171242 The aldol reaction of lithiopinacolonate with substituted benzaldehydes. Solvent and structure effects on aggregation, electrochemistry, and heat of reaction. Arnett, Edward M.; Palmer, Carrie A. (Dep. Chem., Duke Univ., Durham, NC, 27706, USA). Journal of the American Chemical Society, 112(20), 7354-60 (English) 1990. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 113:171242.

AB The reaction of lithium pinacolonate with seven para-substituted benzaldehydes has been examd. in THF and acetonitrile. Reactions were clean, complete, and instantaneous at 25.degree., and heats of reaction were detd. by titrn. calorimetry. Fairly good ($R = 0.96$) correlations between heats of reaction and the usual Hammett .sigma.Psubstituent parameters were obtained although the ionization of substituted benzoic acids is scarcely an appropriate model for the aldol reaction in nonpolar media. The question of electron transfer as a feasible mechanism was tested by using Eberson's criterion for estg. the free energy of activation from the free energy of electron transfer using the oxidn. potential of lithium pinacolonate and the redn. potentials of the aldehydes by secondary harmonic AC (SHACV) and cyclic voltammetry (CV). Calcd. barriers are sufficiently endergonic to eliminate the SET pathway on the basis of this criterion. The effect of lithium perchlorate as a supporting **electrolyte** suggests a significant interaction between the lithium ion and the aldehyde group, which in fact, was detected through the chem. shifts of ^{13}C NMR spectra of the benzaldehydes upon the addn. of lithium perchlorate. Unusual, and unexplained, effects on the oxidn. potential were obsd. from varying the working electrode from platinum to glassy carbon. Aggregation nos. for the initial reactants and for the aldolate product were detd. in both solvents by means of vapor pressure osmometry, cryoscopy, and ^6Li NMR.

IT 124400-77-7
(reaction of, with dimethylbutanone)

RN 124400-77-7 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium- ^6Li salt (9CI) (CA INDEX NAME)

$\text{Me}_3\text{Si}-\text{NH}-\text{SiMe}_3$

● ^6Li

CC 22-4 (Physical Organic Chemistry)
Section cross-reference(s): 29

IT 124400-77-7
(reaction of, with dimethylbutanone)

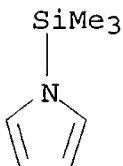
L39 ANSWER 26 OF 34 HCA COPYRIGHT 2003 ACS on STN
112:242083 Very-high-density, electrochemically induced, two-dimensional

- electron gases at a chemically stabilized silicon surface. Benisty, H.; Chazalviel, J. N. (Lab. Phys. Matiere Condens., Ec. Polytech., Palaiseau, 91128, Fr.). Journal of the Electrochemical Society, 137(4), 1209-12 (English) 1990. CODEN: JESOAN. ISSN: 0013-4651.
- AB Silicon/**polymer electrolyte** interfaces have been realized using poly(ethylene oxide) + CsCF₃SO₃ as the **polymer electrolyte**. Such interfaces, when polarized under extreme cathodic conditions, allow one to obtain 2-dimensional electron gases of very high d. (d. ns .apprx. 1013 - 1014 cm⁻²). Considerable improvement in the stability of such systems was found to occur upon pretreatment of the silicon surface with methanol or hexamethyldisilazane. Silicon/methanol electrolyte interfaces themselves exhibit highly stable characteristics. In either cases the obtained 2-dimensional electron gases have been characterized from interfacial capacitance and transconductance measurements. The deduced electron mobility in the very-high-d. layers varies as ns-.alpha.T-.beta. where T is abs. temp. (.alpha. .apprx. 1/3 to 1/2 and .beta. .apprx. 1 to 3/2 for 180 K < T < 400 K), suggesting the relevance of a phonon scattering process.
- IT 999-97-3, Hexamethyldisilazane
(cathodic polarization of silicon surface pretreated with, high d. two-dimensional electron gas from)
- RN 999-97-3 HCA
- CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

Me₃Si-NH-SiMe₃

- CC 72-2 (Electrochemistry)
Section cross-reference(s): 76
- IT 67-56-1, Methanol, properties 999-97-3,
Hexamethyldisilazane
(cathodic polarization of silicon surface pretreated with, high d. two-dimensional electron gas from)
- L39 ANSWER (27) OF 34 HCA COPYRIGHT 2003 ACS on STN
110:176716 Secondary **batteries** with conducting polymer cathodes. Kashiwagi, Toru (Sumitomo Electric Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01014871 A2 19890119 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-170441 19870708.
- AB Substituted, except the 2- and 5-positions, thiophenes or pyrroles are electropolymd. to obtain cathode materials for **batteries**. Thus, 3-bromothiophene was electropolymd. on graphite from a 0.6M propylene carbonate soln. contg. 0.1M (n-Bu)₄NBF₄ under const. potential to form a cathode for use in a Li **battery** using a 1M LiBF₄/propylene carbonate **electrolyte**. The energy efficiency of this **battery** was 91.4%, which remained const. after several tens chrage-discharge cycles.
- IT 113837-08-4
(cathodes, for secondary lithium **batteries**)

RN 113837-08-4 HCA
 CN 1H-Pyrrole, 1-(trimethylsilyl)-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 18276-53-4
 CMF C7 H13 N Si

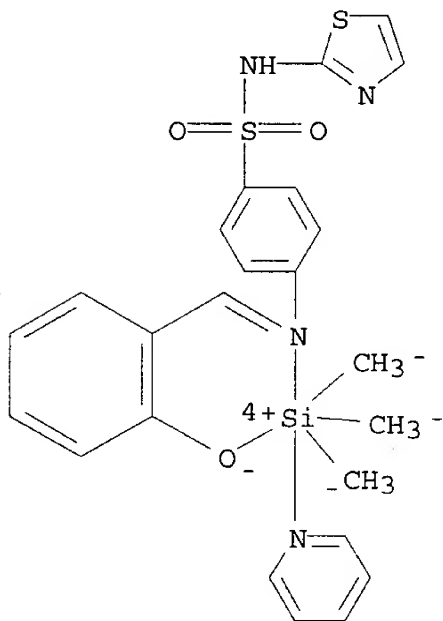


IC ICM H01M004-60
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST **battery** cathode conducting polymer; polybromothiophene
battery cathode
 IT Electric conductors
 (polymeric, polythiophenes and polypyrroles, for **battery**
 cathodes)
 IT Cathodes
 (**battery**, polymers of substituted thiophene or pyrrole
 for)
 IT 72945-66-5 79799-71-6 84928-92-7 84928-93-8 84928-95-0
 90451-70-0D, Poly(3-ethylthiophene), homopolymer 92664-55-6
113837-08-4
 (cathodes, for secondary lithium **batteries**)
 L39 ANSWER 28 OF 34 HCA COPYRIGHT 2003 ACS on STN
 108:75465 Synthesis of some Schiff base derivatives of
 organosilicon(IV). Dashora, R.; Singh, R. V.; Tandon, J. P. (Dep.
 Chem., Univ. Rajasthan, Jaipur, 302 004, India). Indian Journal of
 Chemistry, Section A: Inorganic, Physical, Theoretical &
 Analytical, 25A(12), 1114-16 (English) 1986. CODEN: IJCADU. ISSN:
 0376-4710.
 AB Several new 1:1 complexes of Me₃SiCl with bifunctional tridentate
 ligands, such as, 2-hydroxybenzaldehyde S-benzylthiocarbamate,
 2-hydroxy-1-naphthaldehyde S-benzylthiocarbamate,
 2-hydroxyacetophenone S-benzylthiocarbamate, 2,4-pentanedione
 S-benzylthiocarbamate, 1-phenyl-1,3-butanedione
 S-benzylthiocarbamate, 2-hydroxybenzaldehyde sulfathiazole,
 2-hydroxybenzaldehyde sulfisoxazole, 2-hydroxybenzaldehyde
 sulfaphenazole and 2-hydroxybenzaldehyde sulfaguanidine have been
 prepd. The complexes are non-electrolytes. A
 pentacoordinated trigonal bipyramidal geometry is suggested for the
 complexes on the basis of the spectral data (IR and PMR).
 IT **112783-81-0P 112803-24-4P 112803-25-5P**
112821-85-9P

(prepn. of)

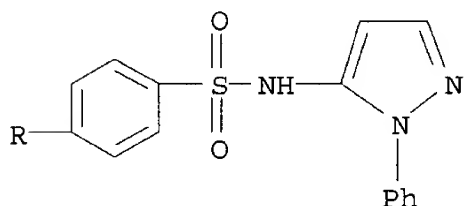
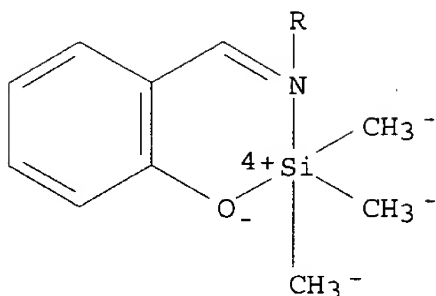
RN 112783-81-0 HCA

CN Silicon, [4-[[[(2-hydroxyphenyl)methylene]amino]-N-2-thiazolyl]benzenesulfonamidato-N4,O4]trimethyl(pyridine) - (9CI) (CA INDEX NAME)



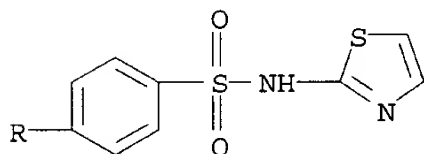
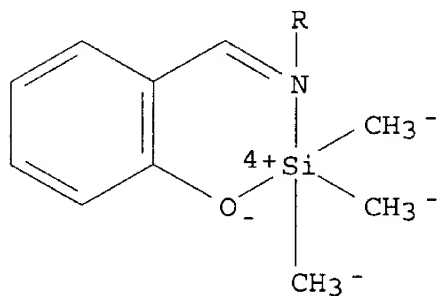
RN 112803-24-4 HCA

CN Silicon, [4-[[[(2-hydroxyphenyl)methylene]amino]-N-(1-phenyl-1H-pyrazol-5-yl)]benzenesulfonamidato-N4,O4]trimethyl - (9CI) (CA INDEX NAME)



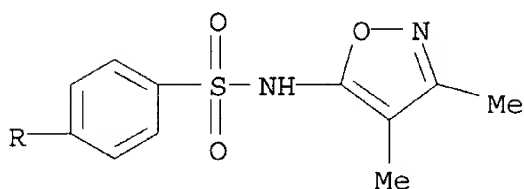
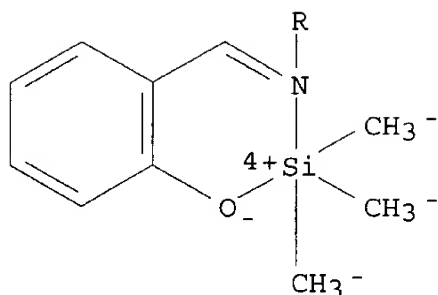
RN 112803-25-5 HCA

CN Silicon, [4-[[[(2-hydroxyphenyl)methylene]amino]-N-2-thiazolyl]benzenesulfonamido-N4,O4]trimethyl- (9CI) (CA INDEX NAME)



RN 112821-85-9 HCA

CN Silicon, [N-(3,4-dimethyl-5-isoxazolyl)-4-[[[(2-hydroxyphenyl)methylene]amino]benzenesulfonamido-N4,O4]trimethyl- (9CI) (CA INDEX NAME)



CC 29-6 (Organometallic and Organometalloidal Compounds)
 IT 112783-80-9P **112783-81-0P** 112783-82-1P 112803-23-3P
112803-24-4P 112803-25-5P 112803-26-6P
 112803-27-7P 112803-28-8P 112803-29-9P 112803-30-2P
112821-85-9P
 (prepn. of)

L39 ANSWER 29 OF 34 HCA COPYRIGHT 2003 ACS on STN
 107:180134 Preparation and electrochemical properties of double-metal nitrides containing lithium. Yamane, H.; Kikkawa, S.; Koizumi, M. (Inst. Sci. Ind. Res., Osaka Univ., Osaka, 567, Japan). Journal of Power Sources, 20(3-4), 311-15 (English) 1987. CODEN: JPSODZ. ISSN: 0378-7753.

AB Li-ion conduction was obsd. in double-metal nitrides (Li₃AlN₂, Li₅SiN₃ (antifluorite structure), Li₃BN₂, Li₂SiN₂, and LiSi₂N₃) for use as **electrolytes** in Li **batteries**. Li₈SiN₄, with the highest Li content of the studied double-metal nitrides, had the highest cond. The ionic cond. of LiMgN was low. The prepn., chem. compn., and crystal structure of the double-metal nitrides are reviewed with 13 refs.

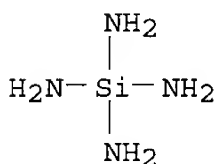
IT 12521-45-8, Lithium silicon nitride (LiSi₂N₃)
 12521-66-3, Lithium silicon nitride (Li₈SiN₄)
 67181-65-1, Lithium silicon nitride (Li₅SiN₃)
 (**electrolytes**, ionic cond. of, for lithium **batteries**)

RN 12521-45-8 HCA
 CN Silanamine, 1-nitrilo-N-(nitrilosilyl)-, monolithium salt (9CI) (CA INDEX NAME)



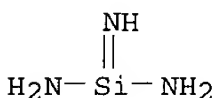
● Li

RN 12521-66-3 HCA
 CN Silanetetramine, octalithium salt (9CI) (CA INDEX NAME)



●8 Li

RN 67181-65-1 HCA
 CN Silanediimine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



●5 Li

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 75, 76
 ST cond double metal nitride lithium; review prepn double metal
 nitride; **battery** lithium metal nitride **electrolyte**
 IT **Batteries**, secondary
 (lithium, **electrolytes** for, double metal nitrides for,
 ionic cond. of)
 IT Crystal structure
 (of lithium double metal nitrides, for lithium **battery**
electrolytes)
 IT Electric conductivity and conduction
 (ionic, of lithium double metal nitrides, for lithium
battery electrolytes)
 IT 12408-97-8, Boron lithium nitride (Li₃BN₂) **12521-45-8**,
 Lithium silicon nitride (LiSi₂N₃) 12521-55-0, Lithium silicon
 nitride (Li₂SiN₂) **12521-66-3**, Lithium silicon nitride

(Li₈SiN₄) 61027-73-4 67181-65-1, Lithium silicon nitride
 (Li₅SiN₃) 110899-36-0
 (electrolytes, ionic cond. of, for lithium
 batteries)

L39 ANSWER 30 OF 34 HCA COPYRIGHT 2003 ACS on STN

104:189678 New materials for solid **electrolyte cells**

. Kikkawa, Shinichi; Koizumi, Mitsue (Inst. Sci. Ind. Res., Osaka Univ., Osaka, 567, Japan). New Materials & New Processes, 3, 78-80 (English) 1985. CODEN: NMNPD2. ISSN: 0742-3993.

AB A Li **battery** using monoclinic NbS₃ showed a flat discharge curve of 1.8 V to a capacity of Li/NbS₃ .apprx.1.7. Another voltage step of 1.3 V was obsd. at Li/NbS₃ = 2.2-2.8. In the case of triclinic NbS₃, the voltage gradually decreased up to Li/NbS₃ .apprx.1.7 and then was almost const. at 1.4 V to Li/NbS₃ .apprx.2.5. The gradual intercalation of Li in NbS₃ during cycling was shown by x-ray diffractometry. Li ionic conduction of ternary Li nitrides contg. Al or Si is reported. A TiS₂-Li₃AlN₂-Li **battery** was discharged at 45 .mu.A/cm² at 104.degree..

IT 12521-45-8 12521-66-3 67181-65-1
 (ionic cond. of, for **battery electrolytes**)

RN 12521-45-8 HCA

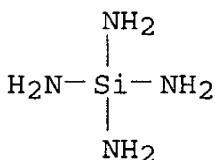
CN Silanamine, 1-nitrilo-N-(nitrilosilyl)-, monolithium salt (9CI) (CA INDEX NAME)



● Li

RN 12521-66-3 HCA

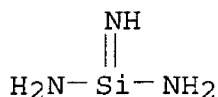
CN Silanetetramine, octalithium salt (9CI) (CA INDEX NAME)



● 8 Li

RN 67181-65-1 HCA

CN Silanediamine, 1-imino-, pentalithium salt (9CI) (CA INDEX NAME)



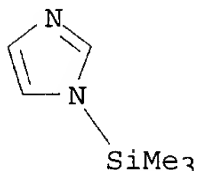
●5 Li

- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST lithium niobium sulfide **battery**; aluminum lithium nitride
battery electrolyte; silicon lithium nitride
battery electrolyte
- IT **Batteries**, secondary
(materials for, prepn. and properties of)
- IT Electric conductivity and conduction
(ionic, of lithium ternary nitrides, for **battery electrolytes**)
- IT 56321-19-8
(electrodes from intercalated, **battery** contg., performance of)
- IT 61027-73-4
(**electrolytes**, in lithium-titanium sulfide **batteries**)
- IT 12521-45-8 12521-55-0 12521-66-3
67181-65-1 102055-50-5
(ionic cond. of, for **battery electrolytes**)
- L39 ANSWER (31) OF 34 HCA COPYRIGHT 2003 ACS on STN
101:237153 Mechanism of electrochemical reduction of the
(5,10,15,20-tetraphenylporphinato)dihydroxophosphorus(V) cation.
Marrese, Carl A.; Carrano, Carl J. (Dep. Chem., Univ. Vermont,
Burlington, VT, 05405, USA). Inorganic Chemistry, 23(24), 3961-8
(English) 1984. CODEN: INOCAJ. ISSN: 0020-1669.
- AB The electrochem. redn. of (5,10,15,20-tetraphenylporphinato)dihydroxophosphorus(1+) (I) is significantly different from those of the analogous dichloro species. As previously reported, redn. of the dichloro complex proceeds by 2 sequential 1-electron steps. The 1st is chem. reversible and involves formation of the radical anion. The 2nd step leads initially to the porphyrin-ring dianion, but reacts further to yield new products (phlorin anion and unmetalated tetraphenylporphine). In contrast, the redn. of I by 1 electron initiates a series of complicated chem. steps, yielding a variety of porphyrin products, some of which were identified. The cause for these differences upon electrochem. redn. was traced to the presence of the weakly acidic hydroxyl protons in the hydroxy compd. The results of cyclic voltammetry, chronoamperometry, and bulk **electrolysis** investigations on the dihydroxy complex are described.
- IT 18156-74-6

(electrochem. redn. of (tetraphenylporphinato)dihydroxyphosphorus
(1+) in presence of)

RN 18156-74-6 HCA

CN 1H-Imidazole, 1-(trimethylsilyl)- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 78

IT 18156-74-6

(electrochem. redn. of (tetraphenylporphinato)dihydroxyphosphorus
(1+) in presence of)

L39 ANSWER 32 OF 34 HCA COPYRIGHT 2003 ACS on STN

100:199663 Electrochemical investigations on bis(azaborolynyl)cobalt and
-iron sandwich complexes. Van der Linden, J. G. M.; Schrauwen, C.
A. M.; Schmitz, J. E. J.; Schmid, G.; Hoehner, U.; Kampmann, D.
(Dep. Inorg. Chem., Univ. Nijmegen, Nijmegen, 6525 ED, Neth.).
Inorganica Chimica Acta, 81(2), 137-42 (English) 1984. CODEN:
ICHAA3. ISSN: 0020-1693.

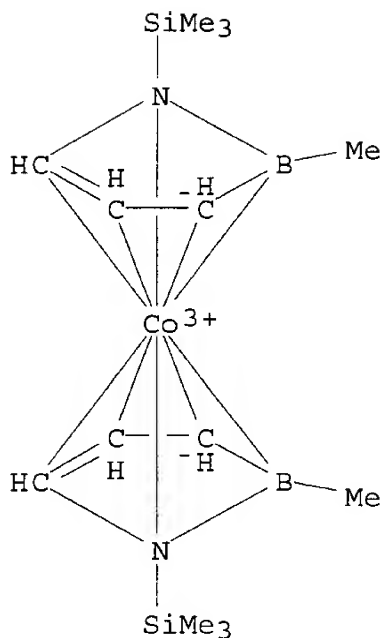
AB Sandwich complexes of Co and Fe with the azaborolynyl (Ab(R)) ligand
(derived from 1,2-azaboroline R, the substituent on the N) and
derivs. of it are studied with normal pulse-, differential pulse-
and cyclic voltammetry at a Pt electrode in THF and CH₂Cl₂ solns.,
1-electron oxidns. being obsd. The oxidn. of [Ab(SiMe₃)]₂Co is
complicated by a substitution of the SiMe₃ group in [Ab(SiMe₃)]₂Co+
by an alkyl group of the tetraalkyl ammonium ion used as supporting
electrolyte. The oxidn. of the Fe complexes in the case
that R = SiMe₃ is nearly completely reversible; however, with R = H
or tert-Bu the oxidized products are not stable. The obsd. trends
in redox potentials can be explained with structural and electronic
properties of the complexes.

IT 89504-28-9

(electrochem. formation and redn. of)

RN 89504-28-9 HCA

CN Cobalt(1+), bis[(3,4,5-.eta.)-2,3-dihydro-2-methyl-1-
(trimethylsilyl)-1H-1,2-azaborol-3-yl-B₂N₁]-, stereoisomer (9CI)
(CA INDEX NAME)



IT 89504-29-0P

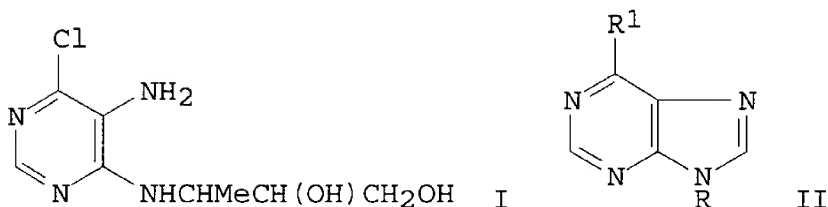
(formation by substitution of trimethylsilyl group by Bu group of tetrabutylammonium supporting **electrolyte** and electrochem. oxidn. of)

RN 89504-29-0 HCA

CN Cobalt, [(3,4,5-.eta.)-1-butyl-2,3-dihydro-2-methyl-1H-1,2-azaborol-3-yl-B2,N1][(3,4,5-.eta.)-2,3-dihydro-2-methyl-1-(trimethylsilyl)-1H-1,2-azaborol-3-yl-B2,N1]- (9CI) (CA INDEX NAME)

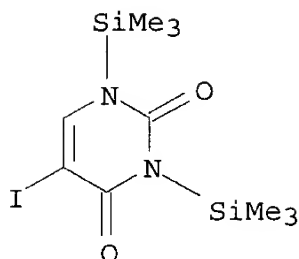
in relation to)
 IT 1923-70-2
 (supporting **electrolyte**, in electrochem. oxidn. of
 cobalt complexes with trimethylsilyl derivs. of azaboroline,
 trimethylsilyl group substitution by Bu group in relation to)

L39 ANSWER 33 OF 34 HCA COPYRIGHT 2003 ACS on STN
 98:179805 Synthesis of aliphatic nucleoside analogs with potential
 antiviral activity. Colla, Leon; Busson, Roger; De Clercq, Erik;
 Vanderhaeghe, Hubert (Rega Inst. Med. Res., Univ. Leuven, Louvain,
 B-3000, Belg.). European Journal of Medicinal Chemistry, 17(6),
 569-76 (English) 1982. CODEN: EJMCA5. ISSN: 0009-4374.
 GI



AB Double-modified adenosine and 8-azaadenosine analogs were prepd.
 which were altered in the 6-position of the base and had an acyclic
 hydroxylated side chain instead of a sugar moiety. Thus, treating
 5-amino-4,6-dichloropyrimidine with MeCH(NH₂)CH(OH)CH₂OH gave
 pyrimidine I, which was cyclized with HC(OEt)₃ to purine II (R =
 CHMeCH(OH)CH₂OH, R¹ = Cl), which was converted to II [R¹ = NHOH,
 NH₂, NHCH₂CH(OH)CH₂OH, OH, OMe]. Some aliph. derivs. of 5-iodo- and
 (E)-5-(2-bromovinyl)uracil were also prepd. Only II [R =
 CH₂CH(OH)CH₂OH, R¹ = NHOH] showed some antiviral activity in
primary rabbit kidney **cell** cultures against
 vesicular stomatitis vaccinia or herpes simplex virus.

IT 66818-26-6
 (reaction of, with acetoxylethyl chloromethyl ether)
 RN 66818-26-6 HCA
 CN 2,4(1H,3H)-Pyrimidinedione, 5-iodo-1,3-bis(trimethylsilyl)- (9CI)
 (CA INDEX NAME)



CC 33-9 (Carbohydrates)

Section cross-reference(s): 1, 28

IT 66818-26-6

(reaction of, with acetoxyethyl chloromethyl ether)

L39 ANSWER (34) OF 34 HCA COPYRIGHT 2003 ACS on STN

91:48795 Origin and elimination of interferences from siliconization procedures in anodic stripping voltammetry. Oehme, M. (Dep. Chem., Univ. Oslo, Oslo, 3, Norway). Analytica Chimica Acta, 107, 67-73 (English) 1979. CODEN: ACACAM. ISSN: 0003-2670.

AB Interferences caused by org. impurities can be a serious problem in trace anal. for heavy metals by differential pulse anodic stripping voltammetry. Org. impurities, which originate from siliconization treatment of the capillary of the hanging Hg drop electrode, can cause high background currents, interfering signals, and peak broadening, esp. in the concn. range <5 ppb. A new method of siliconization for glass capillaries which avoids these problems is reported. A ref. electrode with a polyacrylamide gel-stiffened internal electrolyte is recommended, to avoid difficulties such as adsorption of org. material on low-leakage diaphragms of the Vycor type, which are often used in trace anal.

IT 999-97-3

(in siliconization of glass capillary electrodes for anodic stripping voltammetric anal.)

RN 999-97-3 HCA

CN Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)



CC 79-1 (Inorganic Analytical Chemistry)

ST siliconization interference anodic stripping voltammetry; org interference anodic stripping voltammetry; trace metal detn anodic stripping; heavy metal detn anodic stripping; glass capillary siliconization voltammetry; polyacrylamide gel electrolyte voltammetry

IT 999-97-3

(in siliconization of glass capillary electrodes for anodic stripping voltammetric anal.)